

MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—AVENARIUS' PHILOSOPHY OF PURE
EXPERIENCE (II.).

BY NORMAN SMITH.

IN the preceding article I have sketched the general philosophical position from which Avenarius propounds his theory of the introjectionist argument, and may now proceed to the consideration of that argument in itself. Avenarius has given two very different statements of it, one in *Der Menschliche Weltbegriff*, and the other in four articles entitled "Bemerkungen zum Begriff des Gegenstandes der Psychologie" in the *Vierteljahrsschrift*.¹ I shall start from the latter as being the more definite. Avenarius' teaching is that though the attitude of pure experience is perfectly consistent with itself, there inevitably arises at a very early stage of mental development that falsification of experience to which may be given the name introjection. It consists in a false interpretation of the experience of others which by a backstroke necessitates a similar, and equally false, interpretation of our own experience. When we look at another person we observe that the objects which he perceives lie outside him, and, arguing that the perceptions of them are in him and not outside him, we feel compelled to conclude that he does not apprehend the real external objects but only subjective images or counterparts. As this interpretation is applied by me to the experience of all other persons and is applied by all other persons to me, I feel compelled to apply it to my own world, and accordingly conclude that I do not perceive the

¹ Vol. xviii., p. 150, § 35 ff.

outer objects but only their inner copies. There must be two external worlds, the actual world in space and the apparently real but merely subjective world of each separate observer.¹ Such an argument is, as Avenarius contends,² obviously false. It rests on the assumption that the objects which I immediately experience as outside the body of another person are the real objects which that other person apprehends only indirectly through mental copies. That is to say, on a realistic interpretation of my own experience I base an idealistic interpretation of the experience of others. This contradiction becomes explicit when I am compelled to extend the conclusion thus reached to my own experience, for in so doing I destroy the premiss upon which the whole argument rests.

Now I have not the least intention of seeking to defend such a form of argument. Also, I do not question that in all subjectivist thinking a perpetual alternation between the realistic and the idealistic attitudes is inevitable. In one form or another the realistic assumption is always tacitly made; and that assumption undoubtedly has its origin in the realistic attitude which we spontaneously take up towards the sensible world of immediate experience. Avenarius, in tracing the presence of this self-contradictory assumption through all the various forms of subjective idealism, has rendered a genuine service to philosophy. What I call in question is his assertion that subjective idealism not only logically implies, but finds its originating cause in, this false inference. It is to be observed that Avenarius has given no ground for the assumed necessity of the intjectionist argument save only the spatial externality of objects to the bodies of those who perceive them; and that seems to me insufficient to account for desertion of the realistic attitude of ordinary consciousness. No one at the standpoint of pure experience can fail to observe this spatial externality, and, so far from finding it a stumbling-block and a source of problems, must surely recognise it as necessary for the very purpose of knowledge. We cannot in looking through a window see an external landscape unless the landscape actually exists outside the window, and just as little can we in looking out upon the external world through the eyes—and that is what primitive and unreflective man conceives himself as doing—see that world unless it is actually there outside the eyes. Avenarius insists that the realistic attitude of pure experience is a perfectly satisfac-

¹ Vol. xviii., p. 154, § 46.

² *Ibid.*, § 47 ff.

tory one. From its point of view any and every possible experience can be consistently interpreted. But if so, why should one of the most universal of experiences, the experience, namely, that objects are always external to the body of the observer, or at least, as regards the parts of his own body, to the organ through which they are apprehended, inevitably lead the mind to draw self-contradictory conclusions? Why should such inconsistent conclusions be drawn from a consistent experience?

Dr. Stout in his article on introjection in Baldwin's *Philosophical Dictionary* has quoted a passage in which Herbart has anticipated Avenarius' argument. "A child sees a dog run whimpering from a stick which is raised to strike it. Immediately the child locates (*hineindenkt*) the pain of the blow in the dog; but as a *future* pain, for the dog is not yet struck. He also locates the stick in the dog, for the dog runs away from it; not, however, the *real* stick for it is outside the dog, but the stick *without its reality*, that is the image of the stick. . . . For an image is distinguished from the object represented by the fact that though not possessing its reality it yet resembles it in every other respect. In this way, then, the child is led to ascribe the representation (*Vorstellung*) of the stick to the dog and to distinguish it from its object. The child now possesses a representation of a representation, a very easy but indispensable step in the development of self-consciousness."¹ This is exactly Avenarius' argument, but the more concrete form of statement enforces the obvious objection that no child ever does argue in this way. A child would never dream of thus setting a mental copy of the stick inside the dog. The mind must become thoroughly sophisticated by reflexion on philosophical problems before it can be brought to admit, even as a possibility, that the world immediately experienced is a merely subjective copy. The child feels no difficulty in regarding objects as immediately apprehended by all observers. Just as various spectators may look out of different windows upon the same external landscape, so, the child holds, may animals and men look out through their eyes upon the actual real objects that constitute their common environment. The observers are different and so accordingly are their apprehensions or experiences, but the immediate contents of these experiences are the identical real objects. There is, of course, much difficulty as to how the child conceives the distinction between the objects and his experience of them, and as to

¹ *Psychologie als Wissenschaft*, § 133.

what is involved in the implied distinction between mind and body,¹ but even granting the possibility of the most various interpretations of these terms, it remains true that the child does not conceive the objects apprehended as being representative images or copies of external bodies. The statements of Herbart and Avenarius are therefore in flagrant contradiction with the facts. Realism is the fundamental characteristic of the standpoint of primitive man and of the child-mind, and the considerations which lead to subjective idealism, even in the Cartesian form, are quite beyond their range of vision.

The true originating cause of subjective idealism seems to me to be physiological. Subjective idealism was not definitely formulated until the physiology of the nervous system had been developed by Descartes and his contemporaries;² and the fundamental reason which inclined them to subjective idealism may perhaps be stated in the following simple manner. So long as the eyes can be regarded as windows through which the mind can look out, every observer may directly apprehend the real external objects. But when it is discovered that the eyes are not exits but always only entrances, that they are not passages through which the mind may issue out but only channels through which currents pass into the brain, the mind then appears to be shut off from direct communion with the external objects, and to depend for all its knowledge on mental images which in a mysterious manner accompany the brain-states. These physiological considerations apply as directly to my own experience as to that of others, and so, on the same identical grounds, I may infer that both my own experience and that of other men, though an apparently immediate apprehension of an external world, is purely subjective. Avenarius explicitly disavows this explanation.³ Nowhere, however, does he consider it, much less refute it.

I should further contend that the subjectivist position is not a falsification of the attitude of naïve realism but a necessary step on the way to its correction. Subjective idealism may not itself be true, but the facts upon which it is based suffice to prove that naïve realism is certainly false. In the

¹ Cf. below, p. 156.

² So far as subjective idealism appears in Greek philosophy, as for instance in the philosophy of Democritus, it involves, and would seem to be due to, physical and physiological considerations.

³ *Vierteljahrsschrift*, vol. xviii., "Bemerkungen," p. 419, § 116: "Diese logisch unberechtigte Deutung der Abhängigkeit der 'Farben,' 'Gefühle' u. s. w. vom Gehirn ist nicht der Grund der Introjection, sondern ihre Folge".

end Avenarius' own theory breaks down because of its irreconcilability with these physiological facts. As I have tried to prove in the previous article, he only escapes them by inconsistently accepting the extreme subjectivism involved in the parallelist position.

To revert, however, to my previous line of argument. Avenarius seems to have confused two quite different mental attitudes, the attitude of animism which in its full and unchecked development is found only in the primitive and savage mind but which in a modified form is still the attitude of the child-mind, and that subjective idealism which was first definitely formulated in the time of Descartes. As these two attitudes are fundamentally different, he was bound to fail in any attempt to trace them both to a common root in introjection. Being, however, profoundly impressed by Tylor's treatment of animism in *Primitive Culture*, and following Tylor in his exaggerated view of the part which animism plays in the development of theological and philosophical thought,¹ he very naturally tried to connect the Cartesian dualism, which is the stumbling-block of all naturalistic systems, and which is therefore in a very especial sense the *bête noire* of his own philosophising, with the animistic theories of primitive man. That dualism had previously compelled Avenarius to develop his naturalistic system on idealist lines.² The relief which he felt in escaping both idealism and dualism by readoption of the realistic attitude of natural science and physiology he has described in his introduction to the *Menschlicher Weltbegriff*.³

I may now turn to Avenarius' earlier statement of the introjectionist argument in the *Menschlicher Weltbegriff*. His articles in the *Vierteljahrsschrift* enter upon the problem of introjection only in so far as that is necessary in order to refute the current conception of the data of psychology, and to vindicate that view of its province which has been advocated in this country by Ward and Stout. As the current

¹ Cf. previous article in *MIND* (January, 1906), No. 57, p. 27.

² The stages in the gradual development of Avenarius' philosophy are clearly marked in his published works. The above interpretation of animism, together with a somewhat immature statement of his later doctrine of pure experience, is presented in *Philosophie als Denken der Welt*, but from a point of view indistinguishable from subjective idealism (cf. § 115 ff.). In the *Kritik* this subjectivism is rejected in favour of realism. His doctrine of introjection, as the explanation both of animism and of subjectivism, appears, however, only in the *Menschlicher Weltbegriff*. Finally, in the *Bemerkungen*, Avenarius restates the introjectionist argument, and also develops more explicitly certain aspects of his naturalistic system.

³ Pp. ix.-x.

conception was based on subjective idealism, the theory of introjection required to be formulated only in its connexion with idealism. No direct reference is made to animism,¹ or, save very briefly, to the attitude of ordinary consciousness. In *Philosophie als Denken der Welt* and in the *Kritik* Avenarius had, however, traced all the false conceptions of dualistic metaphysic to primitive animism; and the problem which still remained for solution, and which he set himself to solve in the *Menschlicher Weltbegriff*, was that of accounting for, and removing, the various dualisms (between inner and outer, soul and body, mind and matter, God and the world, etc.) into which the unity of pure experience had thus been resolved. This involved explanation of the transition from pure experience to animism and from animism to subjective idealism; and by interpreting his introjectionist argument, here propounded for the first time, now in a wider and now in a narrower sense he sought to make it yield an explanation of both these vitiating transformations of experience. With the elimination of all introjection both animism and subjectivism, and together with them every vestige of dualism, would, he claims, entirely vanish, leaving that pure experience out of which through introjection they originally emerged. To eliminate introjection is to overthrow both agnosticism and spiritualism, indeed every philosophy which asserts that there are realities which cannot be completely known or problems that cannot be completely solved by ideal completion of the existing sciences. The kind of completion which Avenarius would regard as satisfactory has already been indicated in the previous article.²

The introjectionist argument is stated in the *Menschlicher Weltbegriff*³ in much the same manner as in the *Bemerkungen*, but is developed to a very different conclusion.⁴ The conclusion now drawn is not that the world perceived is a mental copy of external reality but only that the perception of external objects is in the mind. Since the object which

¹ Except in a very significant note (*Vierteljahrsschrift*, vol. xviii., *Bemerkungen*, pp. 153-154) which seems to indicate consciousness of the unsatisfactory manner in which introjection and animism had been connected in the *Menschlicher Weltbegriff* (cf. § 56).

² Cf. previous article, pp. 25-26. ³ § 38 ff.

⁴ The two views do not seem to have been distinguished by previous writers. The statement of the theory given by Ward (*Naturalism and Agnosticism*, vol. ii., p. 172) is somewhat indefinite. Taylor (*Elements of Metaphysics*, pp. 81, 299) is more explicit, but though apparently basing his statement on the *Menschlicher Weltbegriff* seems to have read into it the view of the *Bemerkungen*. Stout, on the other hand, bases his statement entirely on the latter.

another person perceives is seen by us to lie outside him, we infer that there exists in him the perception of it. "Thus in consequence of introjection [we] find on the one side the parts of the environment as 'things,' and on the other side individuals who 'apprehend' the 'things'; that is to say, 'things' on the one hand and 'perceptions of things,' or, more shortly, 'perceptions' on the other."¹ As the voice of each individual comes from within him, and as each individual locates certain feelings in organs which are as a rule inside the body, the perceptions are regarded as forming an inner world. This conclusion seems all the more inevitable as these perceptions are not discoverable on the outside (*am Aussen*) of the body.² The inference may therefore be stated as follows: All other persons have an outer world which they perceive or experience and each has an inner world which consists of these perceptions or experiences. The introjectionist argument is then completed through application to the self. I have an outer world which I perceive or experience and an inner world which consists of these perceptions and experiences.

Many objections to this argument at once suggest themselves. In the first place, the distinction between objects and perceptions of objects must be present in our own experience before we can infer its presence in the experience of others. Dr. Ward has stated that "the essence of introjection consists in applying to the immediate experience of my fellow-creatures conceptions which have no counterpart in my own."³ But if the self has no conception of inner experience or of perception as something distinguishable from the objects apprehended, it could not invent the distinction by any amount of reflexion upon the spatial externality of objects to the bodies of others. Also, it is not clear why the spatial externality of objects to our own body should not in itself, without this roundabout argument through other selves, suffice to direct our attention to so fundamental a distinction as that between objects and the perception of them. But since Avenarius admits as original and primitive the distinction between characters and contents, that is to say, between experience or perception and the contents experienced or perceived, he can only mean that the introjectionist fallacy consists in transforming distinguishable aspects into separate worlds, the inseparable aspects of experience into two kinds of experience.

¹ *Menschlicher Weltbegriff*, § 43. ² *Ibid.*, § 45.

³ *Naturalism and Agnosticism*, vol. ii., 172.

To that the reply is that neither primitive man nor the child does thus oppose inner and outer. Here again Avenarius is interpreting the words 'inner' and 'outer' in terms of the latter subjectivism of reflective consciousness. The distinction between inner and outer, between perception and object perceived, is not in itself illegitimate and false. Everything depends upon the particular manner in which it is viewed; and when Avenarius interprets the spatial metaphor and the localisation of perceptions within the body in a quite literal fashion he is guilty of ignoring the subtleties of a highly complex and very vaguely defined position. The language which he employs to express the distinction has been created in the course of philosophical inquiry and as such is thoroughly misleading. Primitive man and the child do not use so general a term as perception or experience. They say 'I see the object' or 'I touch it,' and thus always keep in view that complexity of relations by which soul and body, mind and object, are interconnected. And no better illustration of this fact could be obtained than the animistic conception of the soul as depicted by Tylor. As Tylor has shown, and as Avenarius himself admits, the soul is not pictured by primitive man as consisting of inner experiences, nor even as the subject or bearer of such experiences, but as a duplicate of the body, itself possessing sense-organs and therefore related to objects in the same manner as the physical organism. Animism is a form of naïve realism, and indeed its extremest form, and just for that reason it always makes use of spatial metaphors, conceiving the inner body as related to the outer body as an individual is related to the house which he inhabits or the clothes which he wears.¹ It is not the dualising of experience, but the duplication of one of the objects experienced, that constitutes animism.

Avenarius' assumption that experience has been at some point in the long past of the human race, and is at some stage in the life of each child, pure experience, and that this primitive experience has been vitiated in both cases by a supervening process of introjection, aided in the case of the child though not of course in the history of the race by current thought and language, has no sufficient ground either in anthropology or in child-psychology. We may get back to a stage at which the child does not distinguish self and not-self, inner and outer, but the differentiating process by which its confused experience is articulated through these distinctions does not seem to be vitiated at some particular stage in

¹ Cf. *Menschlicher Weltbegriff*, § 59.

its development, but rather constantly to advance towards a more and more definite, more and more exact, appreciation both of the opposition between self and not-self and of their interrelations. At no stage is the development describable as a transition from a consistent and true experience to an impossible or illegitimate dualism. If at certain stages duality, such as that of soul and body in the animistic theories, is unduly emphasised, it can be said with equal truth that in the preceding stages the duality was unduly ignored. A duality that leads through animism to the idealism of Plato can only be reckoned an illegitimate development of thought by those who, like Avenarius, advocate a purely naturalistic interpretation of spiritual experience. His attempt to give logical and conclusive proof of its illegitimacy by his theory of the introjectionist argument has certainly failed. In so far as introjection goes beyond the distinction between my experience and the experience of others, that is to say, beyond the hypothesis implied in the attitude of pure experience,¹ it is not involved in animism. For, as we have just seen, though animism modifies the attitude of pure experience, the opposition which it develops is not between inner experience and the outer world, but only between an inner and an outer body. Also—to indicate a further important point—animism in its development is not determined by the introjectionist argument. For it does not originate in any fallacious inference from others to the self, but spontaneously arises as the natural explanation of a very special set of concrete phenomena—those of sleep, dreams and death. As Tylor has by reference to these concrete facts accounted for it in a satisfactory manner, a second explanation is quite superfluous.

Avenarius' conception of the part which animism has played in the development of thought is as unsatisfactory as his attempted explanation of its origin by means of introjection. His position is entirely motivated by the desire to trace all the higher conceptions of religion and philosophy back to the animistic belief in visions of the dead, and so to condemn them as *Aberglaube*, as 'the shadow of a shade'. From this point of view Avenarius seeks to interpret the progress of philosophy as an inevitable development of animism through more and more subtilised forms of spiritualism back to naturalism. Philosophy, as it develops the conception of spirit, passes by completion of the dualism between it and all the objects of possible experience into

¹ Cf. previous article, p. 15.

agnosticism, and agnosticism, by elimination of the spiritualistic opposition of appearance and reality which it has unconsciously retained, returns to the naturalism of pure experience.¹ The various conceptions of spirit, including that of the unknowable, are the *Schutzformen* or *Beibegriffe*² through which the human mind has sought to maintain its inherited beliefs in face of the contrary evidence of pure experience. They are progressively modified to fit the facts as these become more fully known, but the completion of the adaptation coincides with their complete elimination. The following passage from Tylor's *Primitive Culture* may be quoted as the source from which Avenarius probably gained his point of view: "The animism of savages stands for and by itself; it explains its own origin. The animism of civilised men, while more appropriate to advanced knowledge, is in great measure only explicable as a developed product of the older and ruder system. . . . As we explore human thought onward from savage into barbarian and civilised life, we find a state of theory more conformed to positive science, but in itself less complete and

¹ *Menschlicher Weltbegriff*, § 55 (cf. *Kritik*, vol. ii., p. 281, pp. 296-297). According to Avenarius this desertion of the attitude of pure experience and consequent development through spiritualism and agnosticism back to naturalism is not only inevitable, but also fruitful as leading to a naturalism which is conscious of its own meaning and so can never again be tempted to transcend possible experience. Fechner states in a less exaggerated and much more satisfactory manner a similar, though opposed, view of the development of knowledge (*Zend-Avesta*, first edition, vol. ii., pp. 87-96). He shares Avenarius' belief in a primitive state of pure and true experience. Though the starting-point of human experience is the *'unaufgeschlossenes Ei des Glaubens'*, in which the whole truth of the Universe is contained in germ. "it was so unstable that it yielded to every idle suggestion, so uncertain of itself that it fell victim to every deceptive appearance, so little capable of grasping the parts simultaneously with the whole, that every attempt to enter more fully into the parts caused it to lose the meaning of the whole. . . . And so reality divides and subdivides itself without ceasing, becoming always clearer and more intelligible in detail, and always more meaningless (*totter*) and self-contradictory as a whole" (*Zend-Avesta*, loc. cit.). While Avenarius regards the completion of this development as involving a return to that attitude of pure experience which he believes to have preceded animism, Fechner with more historical justification identifies both the primitive and the final attitudes with animism. "The axiom of the forms of knowledge," formulated by Avenarius in the *Kritik* (*Vorwort*, p. vii) and emphasised in his earlier *Philosophie als Denken der Welt*—that scientific forms of knowledge are in all cases developments of the pre-scientific—does not by itself in any way justify his naturalistic conclusions. It is accepted by Fechner, as well as by all idealist writers. This is one of the many points in which Avenarius' view of the development of knowledge reveals kinship with the Hegelian philosophy.

² Cf. previous article, p. 27.

consistent. . . . The soul has given up its ethereal substance, and become an immaterial entity, 'the shadow of a shade'. Its theory is becoming separated from the investigations of biology and mental science, which now discuss the phenomena of life and thought, the senses and the intellect, the emotions and the will, on a groundwork of pure experience."¹

Avenarius' treatment of animism has been approved in most unexpected quarters,² and on that account I have dwelt upon it at greater length. But surely if we were called upon to make a choice between Avenarius' condemnation of animism as the source of all false metaphysics and Fechner's idealisation of it as containing the germ of a final philosophy, we should be compelled to side with the latter. Animism is not the source of the distinction between soul and body but only the first and crudest attempt to comprehend and define their interrelations. To say, as Tylor and Avenarius both do, that the real grounds for the conception of the soul lie in primitive thinking, and that all later attempts to develop it fail to strengthen the grounds upon which it was adopted by the savage mind, is a grotesque misrepresentation of the history of human thought. Some distinction between self and not-self is present from the very start of human experience, and the philosophical value of animism may perhaps be regarded as chiefly consisting in the definiteness which it gave to that more primitive distinction—a definiteness which enabled it to take hold on the human mind and so ultimately to become a subject of scientific reflexion. As an opposition between soul and body it may or may not be tenable, as containing the germ of the distinction between mind and matter, thought and extension, it is indispensable for clearness in philosophical thinking. Avenarius' attempt to remove the distinction by contending that with the advance of knowledge it has ceased to exist even as a problem has resulted in his own case in a one-sided materialism. In overcoming the opposition of subject and object he very seriously misrepresents it. When, on the one hand, he identifies the opposition of subject and object with the distinction between character and content, by using these new and quite general terms, and by describing character and content as inseparable aspects of every experience, he escapes

¹ *Primitive Culture* (1871), i., pp. 452-453. I have not been able to find any authoritative statement as to the extent of the influence which Tylor's treatment of animism exercised on Avenarius. But that it was decisive in determining Avenarius' conception of the main stages in the development of philosophy, and of human thought generally, seems fairly obvious.

² Cf. Ward in *Naturalism and Agnosticism*, vol. ii., 172.

the duty of analysing the varied and complex forms in which they are related in special cases. And when, on the other hand, he identifies the opposition of subject and object with the distinction between self and not-self, in analysing the self into its varied factors he ignores the aspect of character or subjectivity which is the fundamental feature whereby a self is distinguished from all other objects.¹ To this separate treatment of these allied distinctions we may ascribe both the misleading plausibility and the complete failure of his attempted re-establishment of a scientific realism.

In conclusion I may sum up my criticisms of Avenarius' theory of the introjectionist argument. He gives two quite distinct and conflicting statements of it. Both cannot be true, and, as I have tried to show, both are in some degree false. If introjection is interpreted in the wider sense as covering the distinction between inner and outer, perceiving and perceived, it is a quite legitimate distinction, and one which has been formulated by Avenarius himself as the relative opposition of characters and contents. Animism, as the recognition of this duality and a first attempt to define it, is not so much the source of the subsequent errors of philosophy as the beginning of its positive development. And lastly, animism does not originate in the introjectionist argument but in the interpretation of a very special set of concrete phenomena. Avenarius, therefore, has not succeeded in proving either that introjection in this abstract form is a fallacy or that its concrete embodiment in animism is the ultimate source of metaphysical error. If, on the other hand, introjection is identified with subjective idealism, it is undoubtedly a fallacy, involving that self-contradictory alternation between the realistic and the idealistic attitudes which Avenarius has so acutely and suggestively analysed. As a title for this particular fallacy the term 'introjection' is entirely satisfactory. When Avenarius, however, presents the introjectionist argument as the generating cause of subjective idealism, his thinking is evidently perverted by a false view of the development of knowledge. He has again been misled by his confusion of animism with subjectivism, and so has been compelled to represent the latter as a universal illusion of the human mind. Such a view is refuted both by the facts of anthropology and by the actual history of philosophy. Subjectivism is a purely philosophical development which is based on physical and physiological considerations and which did not take definite form until modern times.

¹ For a fuller treatment of this important point, see previous article, pp. 20-21, 28-29.

II.—THE AMBIGUITY OF TRUTH.

BY F. C. S. SCHILLER.

THE purpose of this paper is to bring to a clear issue, and so possibly to the prospect of a settlement, the conflict of opinion now raging in the philosophic world as to the nature of the conception of 'truth'. This issue is an essential part of the greater conflict between the old intellectualist and the new 'pragmatist' school of thought which extends over the whole field of philosophy. For, in consequence of the difference between the aims and methods of the two schools, there is probably no intellectualist treatment of any problem which does not need, and will not bear, restatement in voluntarist terms. But the clash of these two great antithetical attitudes towards life is certainly more dramatic at some points than at others. The influence of belief upon thought, its value and function in knowledge, the relation of 'theory' to 'practice,' the possibility of abstracting from emotional interest, and of ignoring in logic the psychological conditions of all judgment, the connexion between knowing and being, 'truth' and 'fact,' 'origin' and 'validity,' the question of how and how far the real which is said to be 'discovered' is really 'made,' the 'plasticity' and determinable indetermination of reality, the contribution of voluntary acceptance to the constitution of 'fact,' the nature of purpose and of 'mechanism,' the value of teleology, the all-controlling presence of value-judgments and the inter-relations of their various forms, the proper meaning of 'reason,' 'faith,' 'thought,' 'will,' 'freedom,' 'necessity,' all these are critical points at which burning questions have arisen or may arise, and at all of them the new philosophy seems able to provide a distinctive and consistent treatment. Thus there is throughout the field every promise of interesting discoveries and of a successful campaign for a thoroughgoing voluntarism that unsparingly uproots the intellectualist tradition.

But the aim of the present paper must be restricted. It will be confined to one small corner of the battlefield, *viz.* to the single question of the making of 'truth' and the

meaning of a term which is more often mouthed in a passion of unreasoning loyalty than subjected to calm and logical analysis. I propose, to show (1) that such analysis is necessary and possible; (2) that it results in a problem which the current intellectualist logic can neither dismiss nor solve; (3) that to discard the abstractions of this formal logic at once renders this problem simple and soluble; (4) that to solve it is to establish the pragmatist criterion of truth; (5) that the resulting definition of truth unifies experience and rationalises a well-established classification of the sciences; and (6) I shall conclude with a twofold challenge to intellectualist logicians, failure to meet which will, I think, bring out with all desirable clearness that their system at present is as devoid of intellectual completeness as it is of practical fecundity.

My design, it will be seen, deliberately rules out the references to questions of belief, desire, and will, and their ineradicable influence upon cognition, with which Voluntarism has made so much effective play, and this although I am keenly conscious both that their presence as psychical facts in all knowing is hardly open to denial,¹ and that their recognition is essential to the full appreciation of our case. But I am desirous of meeting our adversaries as far as possible on their own ground, that of abstract logic, and of giving them every advantage of position. And so, even at the risk of reducing the real interest of my subject, I will discuss it on the ground of as 'pure,' *i.e.*, as *formal*, a logic as is compatible with the continuance of actual thinking. In other words, I will attempt as 'cut and dried' an analysis of truth as will retain any real meaning, and though I may possibly succeed better with the 'cutting' than with the 'drying,' I would deprecate beforehand objections on the score of the dulness which may probably ensue from the unnatural limitations placed upon my topic.

I. Let us begin then with the problem of analysing the conception of 'truth,' and, to clear up our ideas, let us first observe the extension of the term. We may safely lay it down that the use of truth is *ἴδιον ἀνθρώπου*, a habit peculiar to man. Animals, that is, do not attain to or use the conception. They do not effect discriminations within their experience by means of the predicates 'true' and 'false'. Again, even the philosophers who have been most prodigal

¹ In point of fact such denial has never been attempted: the inquiries as to how a 'pure' thought, abstracted from the psychological conditions of actual thinking, can validly be considered by logic have merely been ignored.

of dogmas concerning the nature of an 'infinite' intelligence (whatever that may mean!), have evinced much hesitation about attributing to it the discursive procedures of our own, and have usually hinted that it would transcend the predication of truth and falsehood. As being then a specific peculiarity of the human mind the conception of 'truth' seems closely analogous to that of 'good' and of 'beautiful,' which seem as naturally to possess antithetical predicates in the 'bad' and the 'ugly,' as the 'true' does in the 'false'. And it may be anticipated that when our psychology has quite outgrown the materialistic prejudices of its adolescence it will probably regard all these habits of judging experiences as just as distinctive and ultimate features of mental process as are the ultimate facts of our perception. In a sense therefore the predications of 'good' and 'bad,' 'true' and 'false,' etc., may take rank with the experiences of 'sweet,' 'red,' 'loud,' 'hard,' etc., as ultimate facts which need be analysed no further.¹

We may next infer that by a *truth* we mean a proposition to which this attribute 'true' has somehow been attached, and which, consequently, is envisaged *sub specie veri*. The *truth* therefore is the totality of things to which this mode of treatment is applied or applicable, whether or not this extends over the whole of our experience.

If now all propositions which involve this predication of truth really deserved it, if all that professes and seems to be 'true' were really true, no difficulty would arise. Things would be 'true' or 'false' as simply and unambiguously as they are 'sweet' or 'sour,' 'red' or 'blue,' and nothing could disturb our judgments or convict them of illusion. But in the sphere of knowledge such, notoriously, is not the case. Our anticipations are often falsified, our claims prove frequently untenable. Our truths may turn out to be false, our goods to be bad: falsehood and error are as rampant as evil in the world of our experience.

This fact compels us (1) to an enlargement, and (2) to a distinction, in the realm of truth. For the logician 'truth' becomes a problem, enlarged so as to include 'falsity' as well, and so, strictly, our problem is the contemplation of experience *sub specie veri et falsi*. Secondly, if not all that claims truth is true, must we not distinguish this initial claim from whatever procedure subsequently justifies or validates it? *Truth, therefore, will become ambiguous.* It will mean

¹The purport of this remark is to confute the notion, which seems dimly to underlie some intellectualist criticisms, that the specific character of the truth-predication is ignored in pragmatist quarters.

primarily a claim which may or may not turn out to be valid. It will mean, secondarily, such a claim *after* it has been tested and ratified, by processes which it behoves us to examine. In the first sense, as a claim, it will always have to be regarded with suspicion. For we shall not know whether it is really and fully true, and we shall tend to reserve this honourable predicate for what has victoriously sustained its claim. And once we realise that a claim to truth is involved in every assertion as such, our vigilance will be sharpened. A claim to truth, being inherent in assertion as such, will come to seem a formal and trivial thing, worth noting once for all, but possessing little real interest for knowledge. A formal logic, therefore, which restricts itself to the registration of such formal claims, we shall regard as solemn trifling; but it will seem a matter of vital importance and of agonised inquiry what it is that validates such claims and makes them really true. And with regard to any 'truth' that is asserted, our first demand will be to know what is *de facto* its condition, whether it sets forth what has been fully validated, or whether it is still a mere, and possibly a random, claim. For this evidently will make all the difference to the meaning and logical value of an assertion. That ' $2 + 2 = 4$ ' and that 'truth is indefinable' stand, *e.g.*, logically on a very different footing: the one is part of a tried and tested system of arithmetical truth, the other the desperate refuge of a bankrupt or indolent theory.

Under such conditions far-reaching confusions could be avoided only by the unobtrusive operation of a beneficent providence. But that such miraculous intervention should guard logicians against the consequences of their negligence was hardly to be hoped for, and accordingly we find, *e.g.*, Prof. A. E. Taylor first laying it down that "true propositions are those which have an unconditional claim on our recognition" (of them as *valid* or merely of their claim?), and then pronouncing that "truth is just the system of propositions which have an unconditional claim to be recognised as *valid*".¹

¹ In his interesting article on "Truth and Practice" in *Phil. Rev.* for May, 1905, pp. 271, 288. Italics mine. This confusion is repeatedly exemplified; *e.g.*, p. 273, "the truth of a statement means not the actual fact of its recognition" (*i.e.*, its *de facto* validity), "but its *rightful claim* on our recognition," p. 274, also on pp. 276 and 278. Prof. Taylor does not distinguish between 'claim' and 'right' and so has not seen that the question of truth is one as to when and how a 'claim' is to be recognised as 'rightful'. But he errs in the company of his master. It would be difficult to express the ambiguity we are criticising more compactly than Mr. Bradley does in the following sentences (*MIND*, N.S., 20, p. 470). "About the *truth* of this Law" (of Contradiction) "so far

Prof. Taylor wisely does not tell us how the clamorousness of a claim is going to establish its validity, but it is clear that his failure to observe the distinction demolishes his definition of truth. It is evident moreover that not much can be expected from theories which have overlooked so vital a distinction. Their unawareness of it will vitiate all their discussions of the nature of 'truth,' by which they will mean now the one sense, now the other, and now both, in inextricable fallacy.

II. Our provisional analysis, therefore, has resulted in our detecting an important ambiguity in the conception of truth which, unless it can be cleared up, must hopelessly vitiate all discussion. In view of this distressing situation it becomes our bounden duty to inquire *how an accepted truth may be distinguished from a mere claim, and how a claim to truth may be validated.* For any logic which aims at dealing with actual thinking the urgency of this inquiry can hardly be exaggerated. But even the most 'purely' intellectual and futilely formal theory of knowledge can hardly refuse to undertake it. For the ambiguity which raises the problem is absolutely all-pervading. And, as we saw, a formal claim to truth is coextensive with the sphere of logical judgment. We are always liable, therefore, to misinterpret every judgment. We may take as a validated truth what in point of fact is really an unsupported claim. But inasmuch as such a claim may always be erroneous, we are constantly in danger of accepting as validly true what, if tested, would be utterly untenable. Every assertion is ambiguous, and as it shows no outward indication of what it really means, we can hardly be said to know the meaning of any assertion whatsoever. On any view of logic, the disastrous and demoralising consequences of such a situation may be imagined. It is imperative therefore to distinguish sharply between the formal inclusion of a statement in the sphere of *truth-or-falsity*, and its incorporation into a system of tested truth. For unless we do so, we simply court deception.

This possibility of deception, moreover, becomes the more serious when we realise how impotent our formal logic is

as it applies, there is in my opinion no question. The question will be rather as to how far the Law applies and how far *therefore* it is true." The first proposition is either a truism or false. It is a truism if 'truth' is taken in the sense of 'claim'; for it then only states that a claim is good if the question of its application is waived. In any other sense of 'truth' it is false (or rather self-contradictory), since it admits that there *is* a question about the application of the 'Law'. In the second proposition it is implied that 'truth' depends not on the mere claim, but on the possibility of application.

to conceive this indispensable distinction and to guard us against so fatal a confusion. Instead of proving a help to the logician it here becomes a snare, by reason of the fundamental abstraction of its standpoint. For if, following Mr. Alfred Sidgwick's brilliant lead, we describe as formal logic every treatment of our cognitive processes which abstracts from the concrete application of our logical functions to actual cases of knowing, it is easy to see that the meaning of an assertion can never be determined apart from the actual application. From the mere verbal form, that is, we cannot tell whether we are dealing with a valid judgment or a sheer claim. To settle this, we must go behind the statement: we must go into the rights of the case. Meaning depends upon purpose, and purpose is a question of fact, of the context and use of the form of words in actual knowing. But all this is just what the abstract standpoint of formal logic forbids us to examine. It conceives the meaning of a proposition to be somehow inherent in it as a form of words, apart from its use. And so when it finds that the same words may be used to convey a variety of meanings in various contexts, it solemnly declares the form of judgment to be as such ambiguous, even though in each actual case of use the meaning intended may be perfectly clear to the meanest understanding! It seems to me extremely doubtful, therefore, whether a genuine admission of the validity of our distinction could be extracted from any formal logician. For it is greatly to be feared that even if he could be induced to admit it in words, he would yet insist on treating it too as purely formal, and rule out on principle attempts to determine how *de facto* the distinction was established and employed.

Although, therefore, our distinction appears to be as clear as it is important, it does not seem at all certain that it would be admitted by the logicians who are so enamoured of truth in the abstract that they have ceased to recognise it in the concrete. More probably they would protest that logic was being conducted back to the old puzzle of a general criterion of truth and error, and would adduce the failures of their predecessors as a valid excuse for their present apathy. Or at most they might concede that a distinction between a truth and a claim to truth must indeed be made, but allege that it could not take any but a negative form. The sole criterion of truth, that is, which can be given, is that truth is not self-contradictory or incoherent. This statement, of course, is merely dogmatic assertion: it can hardly inspire confidence so long as it precedes and precludes examination

of the positive solutions of the problem, and assumes the conceptions of 'self-contradiction' or 'incoherence' as the simplest things in the world. In point of fact neither of them has been adequately analysed by intellectualist logicians, nor is either of them naturally so translucent as to shed a flood of light on any subject. As, however, I cannot now enter upon their obscurities, it must suffice to remark that Capt. Knox's masterly article in the April (1905) number of *MIND*¹ contains ample justification for what I have said about the principle of contradiction. If on the other hand the 'negative criterion' be stated in the form of incoherence, I would inquire merely how intellectualist logic proposes to distinguish the logical coherence, to which it appeals, from the psychological coherence, which it despises. Until this difficult (or impossible?) feat has been achieved, we may safely move on.²

III. Let us proceed therefore to discard old prejudices and to consider how in point of fact we discriminate between 'claims' and 'truths,' how the raw material of a science is elaborated into its final structure, how in short, truth is made. Now this question is not intrinsically a hopeless one. It is not even theoretically particularly difficult to answer. For it concerns essentially facts which may be observed, and with care and attention it should be possible to determine whether the procedures of the various sciences have anything in common, and if so what. By such an inductive appeal to the facts, therefore, we greatly simplify our problem, and may possibly discover its solution. Any obstacle which we may encounter will come merely from the difficulty of intelligently observing the special procedures of the many sciences and of seizing their salient points and general import; we shall not be foredoomed to failure by any intrinsic absurdity of our enterprise.

Now it would be possible, I think, to arrive at our solution by a critical examination of every known science in detail, but it is evident that this procedure would be very long and laborious. It seems better, therefore, merely to state the condensed results of such investigations. They will in this shape stand out more clearly and better exhibit the trend of an argument which runs as follows.

It being taken as established that the sphere of logic is that of the antithetical valuations 'true' and 'false,' we observe in the first place that in every science the truth or falsehood of an answer depends on its relevance to the

¹ N.S., No. 54.

² Cf. also *Humanism*, pp. 52-53.

question raised in that science. An irrelevant answer is justly treated as non-existent for that science, *i.e.* as, strictly, neither 'true' nor 'false'. We observe, secondly, that every science has a definitely circumscribed subject-matter, a definite method of treating it, and a definitely articulated body of interpretations. Every science, in other words, forms a system of truths about some subject. But inasmuch as every science is concerned with some aspect of our total experience, and no science deals with that whole under every aspect, it is clear that sciences arise by the limitation of subjects, the selection of standpoints, and the specialisation of methods. All these operations, however, are artificial, and in a sense arbitrary, and none of them can be conceived to come about except by the action of a purposing intelligence. It follows that the nature of the *purpose* which is pursued in a science will yield the deepest insight into its nature; for what we want to know in the science will determine the questions we put, and their bearing on the questions put will determine the standing of the answers we attain. If we can take the answers as relevant to our questions and conducive to our ends, they will yield 'truth'; if we cannot, 'falsehood'.

Seeing thus that everywhere truth and falsehood depend on the purpose which constitutes the science and are bestowed accordingly, we begin to perceive that the predicates 'true' and 'false' are not unrelated to 'good' and 'bad'. For good and bad also have reference to purpose. 'Good' is what conduces to, 'bad' what thwarts, a purpose. And so it would seem that 'true' and 'false' were valuations, forms of the 'good'-or-'bad' which indicates a reference to an end. Or, as Aristotle said long ago, in a passage the significance of which I am ashamed to have observed only quite recently, "in the case of the intelligence which is theoretical, and neither practical nor productive, its 'good' and 'bad' is 'truth' and 'falsehood'".¹

Truth then, being a valuation, has reference to a purpose. What precisely that reference is will depend on the purpose, which may extend over the whole range of human interest. But it is only in its primary aspect, as valued by individuals, that the predication of 'truth' will refer thus widely to any purpose any one may entertain in a cognitive operation. For it stands to reason that the power of constituting 'objective' truth is not granted so easily. Society exercises

¹ *Eth. Nic.*, vi., 2, 3. Cf. *De Anim.*, iii., 7, 481, b 10. where it is stated that "the true and false are in the same class with the good and bad," *i.e.*, are valuations.

almost as severe a control over the intellectual as over the moral eccentricities and nonconformities of its members; indeed it often so organises itself as to render the recognition of *new* truth nearly impossible. Whatever therefore individuals may recognise and value as 'true,' the 'truths' which *de facto* prevail and are recognised as objective will only be a *selection* from those we are subjectively tempted to recognise. There is therefore no real danger lest this analysis should destroy the 'objectivity' of truth and enthroned subjective licence in its place.

A further convergence in our truth-valuations is produced by the natural tendency to subordinate all ends or purposes to the ultimate end or final purpose, 'the Good'. For in theory, at least, the 'goods,' and therefore the 'truths,' of all the sciences are unified and validated by their relation to the Supreme Good. In practice no doubt this ideal is far from being realised, and there arise at various points conflicts between the various sorts of values or goods, which doubtless will continue until a perfect harmony of all our purposes, scientific, moral, æsthetic and emotional has been achieved. Such conflicts may, of course, be made occasions for theatrically opposing 'truth' to 'goodness,' 'virtue' to 'happiness,' 'science' to 'art,' etc., and afford much scope for dithyrambic declamation. But a sober and clear-headed thought will not be intolerant nor disposed to treat such oppositions as final and absolute: even where under the circumstances their reality must provisionally be admitted, it will essay rather to evaluate each claim with reference to the highest conception of ultimate good which for the time being seems attainable. It will be very chary, therefore, of sacrificing either side beyond recall; it will neither allow the claims of truth to oppress those of moral virtue nor those of moral virtue to suppress art. But it will still more decidedly hold aloof from the quixotic attempt to conceive the sphere of each valuation as independent and as wholly severed from the rest.

IV. We have seen so far that truth is a form of value, and the logical judgment a valuation; but we have not yet raised the question as to what prompts us in bestowing or withholding this value, what are our guiding principles in thus evaluating our experience. The answer to this question takes us straight into the heart of Pragmatism. Nay, the answer to this question *is* Pragmatism, and gives the sense in which Pragmatism professes to have a criterion of truth. For the pragmatist contends that he has an answer which is simple, and open to inspection and easily tested. He

simply bids us go to the facts and observe the actual operations of our knowing. If we will but do this, we shall 'discover' that in all actual knowing the question whether an assertion is 'true' or 'false' is decided uniformly and very simply. It is decided, that is, by its consequences, by its bearing on the interest which prompted to the assertion, by its relation to the purpose which put the question. To add to this that the consequences must be *good* is superfluous. For if and so far as an assertion satisfies or forwards the purpose of the inquiry to which it owes its being, it is so far 'true'; if and so far as it thwarts or baffles it, it is unworkable, unserviceable, 'false'. And 'true' and 'false,' we have seen, are the intellectual forms of 'good' and 'bad'. Or in other words, a 'truth' is what is useful in building up a science; a 'falsehood' what is useless or noxious for this same purpose. To determine therefore whether any answer to any question is 'true' or 'false,' we have merely to note its effect upon the inquiry in which we are interested, and in relation to which it has arisen. And if these effects are favourable, the answer is 'true' and 'good' for our purpose, and 'useful' as a means to the end we pursue.¹ Here then we have exposed to view the whole rationale of Pragmatism, the source of the famous paradoxes that 'truth' depends on its consequences, that the 'true' must be 'good' and 'useful' and 'practical'. I confess that to me they have never seemed more than truisms so simple that I used to fear lest too elaborate an insistence on them should be taken as an insult to the intelligence of my readers. But experience has shown that I was too sanguine, and now I even feel impelled to guard still further against two possible misapprehensions into which an unthinking philosopher might fall.

I would venture to point out in the first place that when we said that truth was estimated by its consequences for some purpose, we were speaking subject to the social character of truth, and quite formally. What consequences are relevant to what purposes depends, of course, on the subject-matter of each science, and may sometimes be in doubt, when the question may be interpreted in several contexts. But as a rule the character of the question sufficiently de-

¹ Strictly both the 'true' and the 'false' answers are, as Mr. Sidgwick says, subdivisions of the 'relevant,' and the irrelevant is really unmeaning. But the unmeaning seems to be relevant until it is detected; it baffles our purpose as surely as the 'false,' and the 'false' answer does not mean what we meant to get, *viz.*, something we can work with, and is so far unmeaning. Hence there is no great harm in treating all that *fails* us as 'false'.

finds the relevant answer which can be treated as true. It is not necessary therefore seriously to contemplate absurdities such as *e.g.* the intrusion of ethical or æsthetical motives into the estimation of mathematical truths, or to refute claims that the isosceles triangle is more virtuous than the scalene, or an integer nobler than a vulgar fraction, or that gravitating bodies must move not in ellipses but in circles, because the circle is the most perfect figure. Pragmatism is far less likely to countenance such confusions than the intellectualist theories from which I drew my last illustration. In some cases doubtless, as in many problems of history and religion, there will be found deep-seated and enduring differences of opinion as to what consequences and what tests may be adduced as relevant: but these differences already exist, and are in no wise created by being recognised and explained. Pragmatism, however, by enlarging our notions of what constitutes relevant evidence is far more likely to conduce to their amicable settlement than the intellectualisms which condemn all faith as inherently irrational and irrelevant to knowledge. And ideally and in principle such disagreements as to the ends which are relevant to the estimation of any evidence are always capable of being composed by an appeal to the supreme purpose which unifies and harmonises all our ends: in practice no doubt we are hardly aware of this, nor agreed as to what it is; but the blame, surely, attaches to the distracted state of our thoughts and not to the pragmatic analysis of truth. For it would surely be preposterous to expect a mere theory of knowledge to adjudicate upon and settle offhand by sheer dint of logic all the disputed questions in all the sciences.

My second caution refers to the fact that I have made the predication of truth dependent on relevance to a proximate rather than an ultimate scientific purpose. This I have done because I believe it represents our actual procedure. The ordinary 'truths' we predicate have little or no concern with ultimate ends and realities. They are true (at least *pro tem.*) if they serve their immediate purpose. If any one hereafter chooses to question them, he is at liberty to do so, and if he can make out his case, to reject them for their inadequacy for his ulterior purposes. But even when the venue and the context of the question have thus been changed, and so its meaning, the truth of the original answer is not thereby abolished. It may have been degraded and reduced to a methodological status, but this is merely to affirm that what is true and serviceable for one purpose is not necessarily so for another. And in any case it is time perhaps to cease

complaining that a truth capable of being improved on, *i.e.* capable of *growing*, is so far not absolutely true and therefore somewhat false, and worthy of contempt. For such complaints spring from an *arbitrary* interpretation of a situation that might more sensibly be envisaged as meaning that none of the falsehoods, out of which our knowledge struggles in its growth, is ever wholly false. But in actual knowing we are not concerned with such arbitrary phrases, but with the bearing of an answer on a question actually propounded. And whatever really answers is really 'true,' even though it may at once be turned into a stepping-stone to higher truth.¹

V. We now find ourselves in a position to lay down some pragmatic definitions. Truth we may define as logical value, and a claim to truth as a claim to possess such value. The validation of such claims proceeds, we hold, by the pragmatic test, *i.e.*, by experience of their effect upon the bodies of established truth which they affect. It is evident that in this sense truth will admit of degrees, extending from the humble truth which satisfies *some* purpose, even though it only be the lowly purpose of some subordinate end, to that ineffable ideal which would satisfy *every* purpose and unify all endeavours. But the main emphasis will clearly fall on the former: for to perfect truth we do not yet attain, and after all even the humblest truth may hold its ground with-

¹ If therefore we realise that we are concerned with human truth alone there is nothing paradoxical in affirmatively answering Prof. A. E. Taylor's question (*Phil. Rev.*, xiv., 268) as to whether "the truth of a newly discovered theorem is created by the fact of its discovery". He asks "did the doctrine of the earth's motion become true when enunciated by the Pythagoreans, false again when men forgot the Pythagorean astronomy, and true a second time on the publication of the book of Copernicus?" If we grant (what is, I suppose, the case) that the Pythagorean, Ptolemaic and Copernican systems represent stages in a progressive approximation to an adequate account of celestial motions, it is clear that each of them was esteemed 'true' while it seemed adequate, and became 'false' when it was improved on. A very slight improvement, moreover, might occasion such a change in valuation. Prof. Taylor has failed to observe that he has conceived the scientific problem too loosely in grouping together the Pythagorean and the Copernican theory as alike cases of the earth's motion. No doubt they may both be so denominated, but the scientific value of the two theories was very different, and the Ptolemaic system is intermediate in value as well as in time. He might just as well have argued that the emission theory of light was true all along because the discovery of radioactivity has forced its undulatory rival to admit that light is sometimes produced by the impact of corpuscles. Perhaps also the pragmatic doctrine has given him offence because he has mistakenly conceived the *making* of truth as a *creation*. But it should by this time be unnecessary to point out that truth is not made out of nothing but out of earlier 'truth,' and that the notion of a creation out of nothing is pseudo-theological.

out suffering rejection. No truth moreover can do more than do its duty and fulfil its function.

I hope that these definitions will have sufficiently borne out the claim made at the beginning that the pragmatic view of truth unifies experience and rationalises the classification of the normative sciences; but it may not be amiss to add a few words on both these topics. That, in the first place, the conception of the logical judgment as a form of valuation connects it with our other valuations and represents it as an integral part of the *ἔφεσις τοῦ ἀγαθοῦ*, of the purposive reaction upon the universe which bestows dignity and grandeur upon the struggle of human life is, I take it, evident. The theoretic importance of this conception is capital. It is easily and absolutely fatal to every form of Naturalism. For if every 'fact' upon which any naturalistic system relies is at bottom a valuation, arrived at by selection and purposive manipulation, there is a manifest absurdity in eliminating the human reference from results which have implied it at every step. The pragmatic doctrine (at all events in its 'humanist' development) affords a protection against Naturalism which ought to be the more appreciated by those interested in taking a 'spiritual' view of life now that it has become pretty clear that the protection afforded by idealistic absolutism is quite illusory. For the 'spiritual nature of the Absolute' does nothing to succour the human aspirations strangled in the coils of materialism: 'absolute spirit' need merely be conceived naturalistically to become as impotent to aid the theologian and the moralist as it has long been seen to be to help the scientist.

And the unification of logic with the other normative sciences is even more valuable practically than theoretically. For it vindicates man's right to present his claims upon the universe in their integrity, as a demand not for Truth alone, but for Goodness, Beauty and Happiness as well, commingled with each other in a fusion one and indiscernible; and what perhaps is for the moment more important still, it justifies our efforts to bring about such a union as we desire. Whether this ideal can be attained, cannot, of course, be certainly predicted; but a philosophy which gives us the right to aspire, and inspires us with the daring to attempt, is surely a great improvement on monisms which, like Spinoza's, crush us with blank and illogical denials of the relevance of human valuations to the truth of things.

In technical philosophy however it is good form to profess more interest in the formal relations of the sciences than in the cosmic claims and destinies of man, and so I hasten

to point out the signal aid which pragmatism affords to a symmetrical classification of the sciences. If truth also is a valuation, we can understand why logic should be a normative science along with ethics and aesthetics : if all the natural sciences make use of logical judgments and lay claim to logical values, we can understand also how and why the normative sciences have dominion over them. And lastly we find that the antithetical valuations and the distinction between claims and their selection into norms run through all the normative sciences in a perfectly analogous way. Just as not everything is true which claims truth, so not everything is good or right or beautiful which claims to be so, while ultimately all these claims are judged by their relation to the perfect harmony which forms our final aspiration.

VI. I promised at the outset to conclude this paper with a twofold challenge, and now that I have set forth as well as I am able the advantages proffered by the pragmatic view of truth I will revert to this challenge, in a spirit not of contentiousness so much as of anxious inquiry. For I fear that a really resolute adherent of the intellectualist tradition would be unmoved and unconvinced by anything I, or any one, could say. He would simply close his eyes and seal his ears, and recite his creed. And perhaps no man yet was ever convinced of philosophic truth against his will. But there are beginning to be signs (and even wonders) that our intellectualism is growing less resolute. And so perhaps even those who are not yet willing to face the new solutions can be brought to see the gaps in the old. If therefore we bring these to their notice very humbly, but very persistently, we may enable them to see that the old intellectualism has left its victims unprovided with answers to two very momentous questions. Let us ask, therefore, how, upon its assumptions, they propose (1) to evaluate a claim to truth, and (2) to discriminate between such a claim and an established truth? These two questions constitute the first part of my challenge. They are, I think, good questions, and such that from any theory of knowledge with pretensions to completeness an answer may fairly be demanded. And if such an answer exists, it is so vital to the whole case of intellectualism that it may fairly be required to produce it. If it is not produced, we will be patient, and hope that some day we may be vouchsafed a revelation of esoteric truth; but human nature is weak and the longer the delay the stronger will grow the suspicion that there is nothing to produce.

The second part of my challenge refers to the intellectu-

alist's rejection of our solution. If we are so very wrong in our very plain and positive assertion that the validity of a truth (claim) is tested and established by the value of its consequences, there ought surely to be no difficulty about producing abundant cases in which the truth of a doubtful assertion is established in some *other* way. I would ask, therefore, for the favour of *one clear case of this kind*.¹ And I make only one stipulation. It should be a case in which there really was a question, so that the *true* answer might have, before examination, turned out *false*. For without this provision we should get no illustration of actual knowing, such as was contemplated by the pragmatist, whose theory professes to discriminate cases in which there is a real chance of acquiring truth and a real risk of falling into falsity. If on the other hand specimens merely of indubitable or verbal truths were adduced, and it were asserted that these were true not because they were useful, but simply because they were true, we should end merely in a wrangle about the historical pedigree of the truth. I should contend that it was at one time doubtful, and accepted as true because of its tested utility: my opponent would dispute my derivation and assert that it had always been true. We should agree that it was *now* indisputable, we should disagree about the origin of this feature; and the past history would usually be too little known to establish either view. And so we should get no nearer to a settlement.

By observing on the other hand *truth in the making*, inferences may be drawn to the nature of truth *already made*. And whether truth is by nature pragmatic, or whether this is a foul aspersion on her character, it is surely most desirable that this point should be settled. Hitherto the chief obstacle to such a decision has been the fact that while in public (and still more in private) there has been much misconception, misrepresentation and abuse of our views, there have been no serious attempts to contest directly, unequivocally, and outright, *any* of our cardinal assertions.² And what perhaps is still more singular, our critics have been completely reticent

¹ Since this was written Prof. Taylor has attempted to answer an earlier form of this challenge in the last number of *MIND*. I shall discuss his article in the next number.

² Prof. Taylor may now perhaps be said to have supplied this desideratum by denying that psychology has any relevance to logic (*loc. cit.*, pp. 267, 287). And yet immediately after (p. 287) he feels constrained to argue that the efficient cause of his accepting any belief as true is a specific form of emotion! I should have thought that the fact that no truth could be accepted without this feeling constituted a pretty substantial connexion between psychology and logic.

as to what alternative solutions to the issues raised they felt themselves in a position to propound. The whole situation is so strange, and so discreditable to the *prestige* of philosophy, that it is earnestly to be hoped that of the many renowned logicians who so vehemently differ from us some should at length see (and show us !) their way to refute these 'heresies' as clearly and articulately as their *θυμοειδὲς* permits their *φιλόσοφον* to express itself.

III.—PSYCHOLOGY AND PHILOSOPHY OF PLAY (II.).

BY W. H. WINCH.

VIII.—PHILOSOPHY OF PLAY—(i.) SURPLUS ENERGY THEORY.

"PLAYS are occasioned by the diversion into certain relatively definite channels of surplus, so-called 'spontaneous,' energies which have resulted from hypernutrition, but which have been given no opportunity to express themselves in activities."¹

"It is the surplus vigour in more highly developed organisms, exceeding what is required for immediate needs, in which play of all kinds takes its rise, manifesting itself by way of imitation or repetition of all those efforts and exertions which are essential to the maintenance of life."²

This general conception seems at first so clear as to be truistic. When we have done our work we cannot play unless we have a surplusage of energy over that which our work demanded from us.

Moreover, it is within the experience of all of us, how very ready we are, when feeling well and strong, to make efforts and exertions beyond those which are essential to the maintenance of life.

I do not think it is an inadequate statement of this theory to say that play arises when we have done our work and are more abundantly fed than the work requires.

But does this surplus vigour always manifest itself "by way of repetition of all those efforts and exertions which are essential to life"?

It is true that many grow so habituated to certain work that they continue it when ends external to the work itself are no longer served.

This seems to be what Mr. Herbert Spencer has in view

¹ *Instinct and Reason*, H. R. Marshall, p. 158.

² R. Wallaschek, *MIND*, xvi., p. 376.

when he says: "Though in many cases this pleasurable consciousness has originally grown out of the representations of benefits to be gained, yet it has come to be a pleasurable consciousness in the object or act apart from anything beyond".

But we may at least urge that if we confine ourselves to the individual life this does not represent the bulk of typical play. Common sense, where man is concerned, calls it work for work's sake, and not play at all.

And other difficulties arise. Only within limits can what we call energy be drafted off from work channels to play channels, and *vice versa*; and the greatest difficulty attaching to the acceptance of the central doctrine of this theory lies in the fact that there is plenty of energy for play when none is available for work. The playful child in school is often not a being of superior, but of deficient energy; and the extremely playful ways of the town product, known variously as gamin, larrikin, pecky-blinder, Bowery boy, hooligan, are very familiar. His superfluous energies are not remarkable for quantity, one would suppose. Nor would any one, who had successfully incited young animals to play when apparently thoroughly tired out, lay very much stress on the necessity for superfluous energy.

We must, I think, notwithstanding its plausibility, deny that the surplus energy theory covers more than a few of the facts and fails to account for the majority of them.

IX. PHILOSOPHY OF PLAY—(ii.) PREPARATION THEORY, I.

The hypothesis last considered represents an attempt to give us the condition of the possibility of play, but does not attempt to account for the forms which play assumes. Such an attempt is made by the preparation theory.

There is, apparently, no difficulty in holding these two theories in conjunction, and this seems to be the position of Mr. H. Rutgers Marshall, who writes:—

"Nature has formed within us tendencies to direct these energies into channels that give practice in directions in which skill is, or will presently be, of value to us. It is a commonplace that the plays of children make them ready for activities of after life; the girl's plays with dolls tell of future maternal activities; the boy's plays correspondingly tell of the world's battles he is to wage, often indeed reflecting the actual physical contests in which he would take part were he not held back from barbarism by the civilisation in which he lives. In like manner the plays of mature men

and women lead them to practise in directions which are likely to be advantageous in after life." ¹ We may compare with this P. Sourian, who says, the need of movement is especially great in the young animal, "because he has to try all the movements which it is necessary for him to make in later life" ²

Applied to the human being such a doctrine involves the complete reversal of common-sense conceptions. As to the teleological aspect of the question I say nothing, but ask whether the essence of play, as we know it, consists in the fact that it is preparatory to the serious work of life. We know that in the case of human beings, it is just that need of preparation which makes us very seriously limit the time and energy which would be given to play, and though

All work and no play
Makes Jack a dull boy,

so also

No work and all play
Sends Jack back to savagery.

For the spontaneous playful life of the average child appears rather to reflect an adult past, and needs considerable pruning and cultivation before being adapted to adult life of to-day.

The young animal trying all "the movements necessary in after life" is not the human boy. Is it the young of any animal? These early movements are said to be such as enable the animal to become proficient in some activity connected with the maintenance of his own life or that of his species.

I am doubtful whether our knowledge of the precise differences and similarities of the movements of the young and adult animal are always, or often, such as enable us to be sure that the playful activity of the young is more a preparation than a hindrance. A point just now keenly debated in educational theory will illustrate this question. Very young children, when drawing spontaneously, do not flex the wrist, but draw in a way which may be roughly described as from the shoulder. By-and-by such of them as continue to draw spontaneously come to draw from the wrist, and the shoulder drawing gradually dies down, so much so that teachers who have to pass an examination in black-board drawing have to *relearn* it. But the bulk of the pupils in the schools will not require shoulder drawing when they grow up. Are we to assume that Nature's process must be the one possible pro-

¹ *Instinct and Reason*, p. 158.

² "Le plaisir du mouvement," *Revue Scientifique*, xvii., p. 365.

cess educationally, and must we begin with drawing from the shoulder? May we not rather by so doing fix a habit which will become an obstacle to the drawing we need?

I purposely give a case where at present, perhaps, no decided answer is possible, as this more adequately brings out the premisses of the theory.

But it may fairly be said that the spontaneous activity of the young of animals other than man does seem to be preparatory, whilst that of man does not, to anything like the same degree, at any rate.

I suggest the following explanation. We are accustomed to consider the play of animals which are going to live exactly as their forebears, whilst with man we know that social environment changes, and demands new operations and readjustments. But consider the play of an animal whose necessities are supplied. The weaver bird will never again require to build its own nest. The squirrel need not bury nuts. The cat is now supplied from the household larder. And male birds (and human beings too) sing on when courtship is over. Yet they repeat the activities that once were necessary. That is, play goes on after, as well as before, the serious activities for which it is supposed to be a preparation; the necessities of the past become the amusements of the present. And in beliefs we have the same general results as in actions.

I have referred to the characteristics of primitive notions of reality. What becomes of these primitive beliefs and how do they decay?

We seem to have a useful analogy in what are called rudimentary organs. It is well known that man bears about with him traces of a long line of ancestry, organic structures hastening to decay, yet demanding some sustenance, and occasionally, in individuals, functioning with vigour, yet seeming less and less to form a coherent whole with the rest of the organism. A psychological parallel can be established. "A careful examination of games reveals the fact that they originated not as pastimes, but as serious divinatory contests."¹ Children "perpetuate games that have otherwise disappeared".

"The children's song-game of to-day, 'Here I brew, here I bake,' carries us back to the childhood of the race when, as Payot says of man's willing, his working was done with the co-operation of all his faculties, hands, body, voice, all have their share in the task."²

¹ President's address to the American Folk-lore Society, Baltimore, 1897.

² *The Child*, Dr. A. F. Chamberlain, p. 21.

This so-called co-operation of all the faculties, which I suspect is accounted a good thing, is rather an uninhibited display of associated movement. We know how many a youthful penman waggles his lolled-out tongue while painfully forming his smudgy strokes, how the embryonic pianist wriggles much more of himself than his fingers. Some years ago I was continuously occupied with a boys' football club. It was delightful to watch how mere rowdy gesticulation and scattered impulse gave way to quiet, fast, well-inhibited movement, and attention dead-centred on the ball. Now the 'faculties' were really co-operating, that is, they were working to one end without waste of energy. I am constrained to introduce this short discussion mainly because of its pedagogical reference. There is too great a tendency in much infant-school work of to-day to noisy and redundant movements; this, too, is said to be work with all the faculties; really it is but a survival of the primitive diffused excitement which only with difficulty becomes definitely localised and applied, without waste and excess, to a particular end. We may need pedagogically to adopt such a method in some instances; as when we introduce arithmetic by the counting of objects, or of movements which we can see in place of the later and finally sufficient movements of attention. But they are mere accessories to secure the direction of attention, and we should discard them as soon as possible. They are survivals of a primitive type.

"The account of games and plays of children collected by Mr. W. H. Newell and Mrs. Gomme affords innumerable examples of the child's reflexion of the labours and duties of the past," and Prof. Groos says:¹ "Play will in general serve more to tone down instincts already present than to strengthen them or create entirely new ones". This latter sentence requires comment, for whilst heartily agreeing that our more primitive instincts are eased off by play, yet how does such a view consist with Prof. Groos' theory that play is a divinely appointed preparation for the work of life, except, of course, in this purely negative sense.

I heartily agree that primitive instincts are eased off by play. It is extremely characteristic of school children when charged with some barbarity to their fellows to answer: "If you please, I was only playing". And many school teachers owe their success to their wisdom in drafting off the bellicose into cricket and football clubs, and so toning off the instinct to fight.

¹ *Play of Man*, p. 692.

But this is not, strictly speaking, exercising the instinct, it is diverting its muscular concomitants, and that perhaps is what is meant in the above quotation from Prof. Groos. But it seems difficult to connect this dictum with his general theory, *viz.*, that play is a divinely appointed means of preparation for the work of life. For, according to this, play neither strengthens instincts nor creates new ones, but rather tones down old ones. I can understand the view that regards the young animal as possessing and exercising organs in embryo before their extended and serious use in adult life gives them a 'survival value'; and that play is just a preliminary practice (*Vorübung*) or preparatory practice (*Einkübung*) of these embryonic organs. This is an intelligible hypothesis, but it is difficult to maintain it in conjunction with the view that the function of play is to tone down the old and ease its decay, and not to strengthen growing instincts. Yet I do not think I entirely misunderstand Prof. Groos, for he is very loth to call love-plays plays at all, because love-play "differs from all that we have previously considered in being not mere practice preparatory to the exercise of an instinct, but rather its actual working". But he further says:¹ "It would seem to be firmly established that, among birds at least, the arts of courtship are practised as youthful sport before the time for reproduction," and, for my part, I do not know how we should class all the philanderings and flirtings of the human male and female from fairly early childhood unless we call them play. Love-plays seem to me the most indubitable case of a preparation or practice for later serious activities, though even here there are considerations which should make us pause. We cannot apply the doctrine of concomitant variations with success; we cannot say, the more preparation of this sort, the more success in rearing a family; and the 'new woman' is, I believe, as a child, as partial to dolls as other women.

We do not usually regard precocity in sexual matters as a good thing at all. The doctrine that practice makes perfect has in this connexion often borne immoral consequences.

The distinction, however, between preparation and practice on the one hand and exercise on the other gives rise to many difficulties. Is a boy playing with a gun exercising his soldierly instinct, or is he only preparing to exercise that instinct? Is a girl playing with a doll preparing for the development of the maternal instinct, or exercising an embryonic maternal instinct?

¹ *Play of Animals*, p. 256.

An endeavour to answer a few questions of this kind shows how very difficult the application of the distinction may be. This consideration, however, is not fatal to a definition. We always expect difficult marginal cases, and my aim is rather to take large groups of activities which seem favourable or unfavourable to the theory, such as the spontaneous activities of genius.

X. PHILOSOPHY OF PLAY—(iii.) PREPARATION THEORY, II.

Play, as we have said above, on this theory, is regarded as a divinely appointed means, whereby the functions of adult life are prepared for. Evolution itself, in so far as man and the higher animals are in advance of the lower, is rendered possible by a long period of adolescence which is regarded as opportunity for play. And this view would seem to be supported by the general truth that an increasing period of immaturity seems characteristic of the higher animals, however much we may doubt the teleological explanation given.

It is interesting and valuable to compare with this view the general conceptions which underlie our notions of precocity.

Precocious people are those who manifest at an unusually early age the characteristics which are mostly exhibited at a later one. There seems a very direct preparation in many cases for the work of adult life. In the biographies of men of genius no characteristic is more striking than the early age at which their especial bent becomes apparent. Psychologically, it is true, we might call such activities play, but they are not *Vorübung*, nor *Einübung*, but *Ausübung*; and the Preparation theory can hardly call these activities its own.

A long period in which the animal plays before entering upon the work of life is, on that theory, demanded as a *sine quâ non* of evolutionary progress. The lower animals, on this view, are the lower animals because they begin their life work almost at once, with very little preliminary play. Yet the genius, the progressive force *par excellence*, differs from ordinary mortals in beginning his life work very early. Nor is it possible to dismiss this argument by reference to the admittedly abnormal and irregular character of genius. For if we descend a little lower in the scale and take that much larger class, the men of ability, to whom Galton applied the term genius, what shall we find?

We do not see, indeed, so early a specialisation in any particular direction; that is readily admitted. Nor should we expect it, for the characteristic of ability as distinct from genius is its relatively unspecialised nature. But we do find

a very early devotion to work of some kind. Such men can 'play' and play well; but work, whether at school or university, in the classes of a polytechnic, or in the early conduct of business, absorbs their powers and almost monopolises their attention. They, too, then, begin their life work early, or at least begin a systematic and intentional preparation for it which is very far removed from the sort of preparation afforded by the unregulated spontaneities of play.

Here then, assuredly, we have a class of facts which the preparation theory will find it very hard to embrace. Extended play is said to be a condition of evolutionary progress, whilst the human factors, who most completely, if not entirely, exemplify that evolution, are the very ones who do not show the extended play period required by the theory.

Perhaps one may be permitted to make a suggestion which would account for the vogue of this conception.

Extended adolescence, extended preparation, no doubt mark a high position in Nature's scale; we find the same thing enforced in civilised society. Scarcely any positions of much social importance are given to any who have not passed through a long professional training. Wage earning and remunerative work begin late. But this is hardly because the individuals in question have been playing all the time. So much is the case otherwise that, when Mrs. Humphry Ward in *Robert Elsmere* wonders how it is that in preparing for one's life-work one must reduce one's self to the verge of death in the process, we allow much justification for the rhetorical exaggeration.

And Prof. Lloyd Morgan's work on the lower animals indicates that they too owe very much to deliberate education on the part of their parents or other members of the social group to which they belong.

But are all these extended preparations the preparations of play? The question seems only to admit of a negative answer. So that whilst it is perfectly true that an extended period of immaturity and preparation is a marked characteristic of the higher animals, the value of this period does not arise because there is more time for play, but because there is a longer period of comparative plasticity during which deliberate education may go on.

XI. PHILOSOPHY OF PLAY—(iv.) RECAPITULATION THEORY.

If we hold the doctrine of biological recapitulation at all, we must, I think, connect the spontaneous activities of childhood with a preceding stage in adult work and thought.

And conversely, human play, in its resemblances to the serious activities of lower stages of human and animal life, supplies a parallel to the biological doctrine of recapitulation.

But it is one thing to hold recapitulation as an empirical law and another to declare its necessity. Whilst admitting the very great range of this doctrine in development, Prof. A. M. Marshall¹ tells us that the study of biological development discloses to us also "a series of ingenious, determined, varied, but more or less unsuccessful efforts to escape from the necessity of recapitulating, and to substitute for the ancestral process a more direct method".

Prof. Miall,² who is hardly a thorough-going recapitulationist, thinks "certain facts in the development of individuals have an historical significance and cannot be explained by mere adaption to present circumstances; further, that adaptations tend to be inherited at corresponding phases, both in the ontogeny and the phylogeny".

Recapitulation in biology, therefore, will not cover the whole field, but the great range of its application is admitted.

If then, we are not to suppose function entirely dissociated from structure, we should expect to find the work of one age becoming the play of the next. To take one instance. The boy who 'plays' truant is usually marked out from his fellows by "impulsiveness, lack of persistence, impatience of restraint, carelessness of person, indifference toward property, and lack of sympathy". He "stands like an outcrop of an older formation, pointing the genetic psychologist back to the probable origin of the migrating instinct".³

But it is not merely the truant who so strikingly illustrates a recapitulation theory; in fact, such a case is atavistic rather than normally recapitulatory.

The great support to this theory comes from facts collected over a much wider field, and from average specimens of humanity.

"Mr. J. J. Jegi, summing up the general results of the tests of some 8,000 school children in New York by J. P. Taylor, in California by Miss H. M. Willard, in Massachusetts by Will. S. Monroe, and in Milwaukee, Wisconsin, by himself, as to their 'hopes,' 'ambitions,' 'vocational interests,' etc., observes: 'In these four studies alone we have tested about 8,000 school children, and there appears to be a wonderful agreement in all of them, as well as in the many smaller groups tested, in regard to the types of occu-

¹ Address to Biological Section, British Association, 1890.

² Address to the Zoological Section, British Association, 1897.

³ *The Child*, A. F. Chamberlain, p. 89.

pations that are most popular during the earlier years of school life. The trades involving a large share of "doing with the hands," "making," as carpentry, engineering, farming, etc., are most sought by the boys, and teaching, dress-making, millinery and housekeeping by the girls.¹ This result, Mr. Jegi notes, cannot be due to the teaching of manual training or of sewing, for the majority of the children in question do not take either of these, even when they happen to be taught in the schools. Mr. Jegi concludes that 'certainly from the age of twelve years children are making a conscious introspection of their talents, and the teacher cannot afford to neglect this opportunity for good'. Noticeable also is predominance of 'like it' as the reason assigned for the favourite occupation, even in America money influencing less than is commonly supposed."¹

Mr. Jegi's investigation is most valuable, though I am a little doubtful of the "conscious introspection of their talents". Is not the child's real question rather, "What do I like to do?" instead of, "What can I do?" One would hardly have supposed that many young children would be influenced by such a distant consequence as the ultimate possession of money in late adult life.

I have, moreover, taken the opportunity of questioning all the men I know whose adult work does really represent a choice of their own made at a mature age. Their youthful desires were very similar to those quoted, and much thankfulness was shown that their boyish impulses were not allowed to commit them to a career. On a recapitulation theory, I suggest that such facts as these offer no difficulty. Moreover, the conclusions arrived at in the chapters on Art and Language, together with the general psychological analysis of games and their origins, seem to receive an adequate interpretation on the Recapitulation theory. Nor is action to be overlooked; the diffused and uninhibited associated motions which are characteristic of early work recur in the unregulated spontaneities of play.

Perhaps it may be worth while to mention a very large class of activities which are on the border line of the playful and the serious, *viz.*, ceremonial observances. I think, without any analysis of particular cases, the statement will be allowed that the explanation of these is realistic, not symbolic; and that much that is quite unmeaning now had once a very real significance.

Nor should we in this connexion fail to note how imme-

¹ *The Child*, A. F. Chamberlain, p. 312.

diately, on adopting a playful attitude of body or mind, all classes of society seem to change their mental outfit. The man who in business acknowledges nothing but good evidence, talks superstition over his dinner table not wholly with disbelief. The sober, industrious student becomes a yelling yahoo. The law-abiding citizen will settle the disputes of play with his own right hand. One might almost be tempted to re-echo the cynic's utterance: "Life would be very tolerable were it not for its pleasures". And one asks: Is all spontaneity bad? Is there no spontaneous advance? Has play no function except to degrade? I propose to attempt some answer to these and similar questions in the next and final section.

XII.—PHILOSOPHY OF PLAY—(v.) SUMMARY AND CONCLUSION.

So many questions of development, biological or psychological, have been raised in the preceding pages that I cannot hope to have escaped considerable error both in interpreting the conclusions of others and in advancing my own. But it sometimes saves misconception, and may be of service both to the writer and reader, to attempt some sort of summary of connected conclusions as the writer conceives them.

Pre-Darwinian biology concluded that given due liberty and sustenance, each individual would develop into a perfect being according to the law of its species.¹ And unimpeded development, spontaneity and liberty were enthroned as ethical ideals. To this group of conceptions belongs the play-preparation theory which finds such large expression in Froebel. The muddles of priest and statesman were responsible for the world's misery, spontaneous and unimpeded development of the individual would soon put things right; thus ran the correlated political doctrine in the mouth of the demagogue and revolutionist. The educational doctrine which logically belongs to this has recently filtered down to the primary schools as "new".

But with Malthus and Darwin, and particularly with the doctrine of the Origin of Species, there came a great change. Spontaneous variation was indeed the moving force, but it might occur in one direction just as much as another. The environment *selected* which should survive. Struggle for survival took the place of unimpeded development. God helps those who help themselves became the text of many edifying

¹ Cp. Graham Wallis, Froebelian Pedagogy, *Child Life*, July, 1901.

books; free-trade all round; work first, play afterwards. The surplus energy theory logically correlates with these conceptions, and their outcome educationally was the exaltation of competitive examinations, and "payment by results". Then came the dictum "Ontogeny repeats Phylogeny," the child passes through the stages which the race has passed through. Here we get a logical bifurcation, according as it is held that the child *must* pass through these stages at a certain rate, or that the child shall linger as short a time in primitive stages as possible. But, either way, such a theory requires that the spontaneous activities of childhood shall be recapitulatory.

But both these great optimisms have given way. Neither unrestricted liberty nor equality in strife commend themselves to the thought of to-day. The survival of the fittest turns out to mean the survival of those who do survive, since that is the test of fitness. Though in the long run, as the economists say, national persistence may be the best test of all, yet, applied to our present town populations, we may be pardoned for not thinking too highly of the survivors.

Moreover, limitations to biological recapitulation, physiological short-cuts and instinctive plasticity, rather than instinctive reflexiveness, are dominant notes of latter-day science.

So that the educational justification of complete recapitulation is gone, and we need not regard impulse and instinct as divine guides to which exclusive attention must be given.

But there is something on the other side. It is true, no doubt, as some recent work seems to show, that variation has a trend and is not entirely indifferent in direction, yet we lack that confidence in the inheritance of acquired characters which formed yet another strong support of mid-century optimism.

The upward movement of men on the whole, which was to diminish the sphere of government and make democracy safe, does not seem to be taking place.

Nature, not nurture, has again become the dominant partner, but Nature, no longer as a beneficent mother working wholly for good, but as a stern task-master whom we must obey that we may live; but from whom, if we study him carefully, we may snatch here and there a little victory for our own ideals.

And this view, I take it, has an exact application to the school work of to-day. Let us by all means study the spontaneities of play; no inductive work in this department can be thrown away, but to erect our empirical conclusions into pedagogical imperatives is fatal.

Spontaneities and games are neither good nor bad because they are games, and different individuals will, in their play, show traits of varying reversion to primitive types; whilst the boy of genius will often play at his life-work. I have already considered in the chapters on Language and Art to what extent we can trust the spontaneities of play for entry into the social heritage of knowledge, so far as the average pupil is concerned. "But surely play has a vital and valuable function," an objector will remark, "and you allow that the activities of savage times may be transferred to games with a gradual loss of their former emotional concomitants."

It is excellent to have a giant's strength,
But it is tyrannous to use it like a giant.

Well-conducted games may give us the first without the second perhaps.

"You further say," our objector continues, "that the spontaneities of play should be watched as indications of natural development, as they may be useful pedagogically, though not constituting in themselves actual preparation for the work of life. Is not play 'recreation' as well as 'recapitulation'?"

"You seem to play as degrading, do you wish to abolish it?"

I take it that the overwhelming importance of play lies in the value it possesses as a brake. It is a truism that civilisation demands more numerous and more rapid nervous adjustments, at least for large classes of the community. It does not seem that what we call the physical basis of mental life is properly sustained without intervals for physical recreation by activities which make little demand on the higher nervous centres. We are hardly awake to the national importance of play as recreation. But the aimless shrieking and horse-play of so many of the girls and boys in the asphalted playgrounds of our primary schools, veritably 'play' as it is in a biological and psychological sense, is just the sort of play which is degrading, is just that sort of primitive survival which I hope to see diminish. Guilds of play, school-clubs, and kindred agencies are based on the view, not that natural play is divine—most of those in close contact with the facts of human life know it is not—but that artificial play may be invented which will satisfy the desire for movement and beauty without gratifying low tastes and sentiments. And the same justification is found in belief as in action. We cannot long maintain ourselves on the heights, we descend for rest to the lower slopes, keeping, if we can, out of the valleys beneath.

A source of difficulty in this subject of play and spontaneous advance has arisen from our habit of considering man philosophically as one and indivisible. The evolution of men would in some ways be a safer title than the evolution of man. Noting the spontaneous advance of genius, and the disinterested motives, as we call them, which produce much of the world's best work, it has been too hastily assumed that we may trust to this over the whole field of labour. True enough we find spontaneity everywhere, playful and otherwise, but most of it is not like that of the genius, in front of, but behind, the times.

The problem for us, setting aside the optimistic exaggeration of "preparation" theories, and remembering the plasticity and latitude which modern 'recapitulation' theories permit, is to use 'play' as a relief from work without descending into barbarism in the process; to use 'play' as a means of maintaining the physical strength to which modern life conditions are so inimical; to use 'play' as suggestive of mental development, so that we may find the easiest lines of approach for adult work and thought; and to supersede the play which too markedly exhibits primitive action, primitive beliefs, primitive ethics.

IV.—KANT'S ANTITHESIS OF DOGMATISM AND CRITICISM.

BY ARTHUR O. LOVEJOY.

KANT's distinction between two sharply contrasted types of philosophical method, designated by the names of 'dogmatism' and 'criticism' has come to be one of the accepted rubrics in the current treatment of the history of philosophy. It is commonly supposed to correspond to actual historical differences that are both definite and important. For this celebrated antithesis not only sums up in a single phrase what Kant conceived to be the most important and distinctive feature of his own doctrine; it also, as Kant sets it forth, contains several plain implications as to matters of historical fact which concern much more than his own doctrine: implications, namely, as to the real character of the philosophical procedure of his predecessors, especially of Leibniz and Wolff; as to the measure of his own divergence from them, in his conception of the nature and scope of the ultimate criteria of truth; and as to the degree of essential novelty and originality that can be claimed for the Kantian system. In particular, the customary assumption of the validity of the antithesis has brought about that many more or less instructed persons carry about with them, as their one firmly fixed philosophical idea, the persuasion that between the method of philosophy in vogue before Kant's day, and that in vogue since, there is a great gulf fixed. I propose here to show that the antithesis in question is seriously misleading, and to point out certain misrepresentations of historic facts, certain exaggerations and certain ambiguities in Kant's way of presenting it, and certain errors in those ideas about the criteria of truth employed in metaphysical reasoning, upon which the antithesis is based. Behind this simple and popular and apparently convincing scheme for classifying historic tendencies lies a very considerable, though not uncharacteristic, confusion in Kant's thinking. He was able to make so sharp the antithesis between his own and earlier systems only because he had been

guilty of three rather singular oversights. In the first place, he had failed to hold clearly in mind what the doctrine of philosophical method held by his immediate predecessors had actually been. In the second place, he had failed to consider duly and define clearly the relation of his own doctrine to a familiar principle which has been the main and the generally accepted instrument of metaphysical reasoning, as well before his day as after it. And in the third place, he had forgotten—and most of his expositors have ever since overlooked—the fact that, of the special arguments in which he worked out his own ‘critical’ method, the most important and ostensibly the most ‘critical’—namely, the argument about causality embodied in the Second Analogy of Experience—was merely an elaboration of an argument already employed by Kant’s ‘dogmatic’ predecessor, Wolff, from whom he seems unconsciously to have borrowed it.¹ These considerations will, I hope, throw an appreciable, and, if that be conceivable, a somewhat new illumination upon the limitations of Kant’s thought and upon its historical connexions. Now that the world, and especially the Germanic part of it, has ceased celebrating—not without a certain measure of unphilosophical *Schwärmerei*—the centenary of the worthy Königsberger’s death, nothing, I take it, could be more fitting than that students of the history of thought should undertake a new inquest into the real originality, and the real value, of this central idea of the thinker who is credited, above all, with giving to philosophy a new and definitive method. The outcome of the inquiry will, I think, tend somewhat to qualify the conventional high estimate of Kant’s importance, so far as the methodological question is concerned. Prof. William James has, in a public address, laid hands on our father Parmenides with some boldness: “I believe,” he says, “that Kant bequeaths to us not one single conception which is both indispensable to philosophy and which philosophy either did not possess before him, or was not destined inevitably to acquire after him, through the growth of men’s reflexion upon the hypotheses by which science interprets nature. The true line of philosophic progress lies, in short, not so much *through* Kant as *round* him, to the point where we now stand. Philosophy can perfectly well outflank him, and build herself up into an adequate fulness by prolonging more directly the older English lines.” This is rather more than I care here to maintain; it is not

¹ This third point cannot be dealt with within the limits of this paper. The proof of it is offered in a forthcoming article by the present writer in the *Archiv für Geschichte der Philosophie*.

so much from Kant's positive contentions as from his negations and his unfair reflexions upon his precursors, that this paper will offer reasons for dissenting. Yet it is true, I think, that our present somewhat minute inquiry will make it evident that the tendency of Kant's influence has been to obscure or disguise the proper and the historic method of metaphysical reasoning, and to lead to the assumption of a breach of continuity in the secular working out of philosophical problems, where none really exists.

What Kant means by his antithesis is, of course, sufficiently clear. The distinction between dogmatism and criticism is represented as radical; and it has a perfectly definite technical character. A dogmatist, in the special sense, is a philosopher who deliberately goes about making synthetic judgments *a priori*, without first pausing to ask himself whether, or how, such judgments are logically possible. That is the definition of the creature; and of the motive which leads him to be such as he is, Kant gives a plain account in various passages of the *Transcendental Dialectic* and of the *Prolegomena*. The weakness in human nature which causes men to construct dogmatic systems of philosophy is the passion for completeness in the conception of things and in the explanation of their conditions, the disposition "to find for every conditioned an unconditioned and so to complete the unity of knowledge". The speculative metaphysician, in short, is the man who suffers from an uncontrolled craving for the absolute and ultimate. The reader of Kant cannot fail to derive the impression that the philosophical ambitions of earlier thinkers, and especially of the school in which Kant himself had been brought up, had been characterised by a general ignoring of limits, by a naïve assumption of the adequacy of the powers of human reason, and by a careless neglect to define the criteria of truth with either proper narrowness or proper explicitness. Kant's whole picture of the motives and the achievement of all constructive pre-Kantian metaphysicians is the picture of the motives and the achievement of an Icarus.

Now this picture is entirely in keeping with the view about metaphysics commonly held by the man in the street, and even by many natural scientists and some philosophers; but to any one who will take the trouble to understand the inner springs of the historical movement of metaphysical reflexion, it must seem an unintelligent caricature. The primary and exigent philosophic passion, as the history of philosophy displays it, is not the passion for completeness in the conception of the world of experience and of the conditions of

it, but the passion for consistency and coherency in that conception. The greater philosophers have been distinguished, not by a more insatiable lust for the synthesis of abstruse ideas, but by a superior talent for the analysis of the common ideas used in all thinking. Philosophy begins, no doubt, in the case of a Thales or any similar pioneer, with a demand for completeness and ultimateness of explanation of given facts; but—if I may repeat what I have already remarked elsewhere—philosophy once begun is kept going and endlessly changing by the continual fresh discovery of latent inconsistencies in the accepted interpretations of experience. Every man is more or less disturbed at any intimations of the presence of such inconsistencies in his body of apparently settled opinions; and the philosopher, as he is usually exemplified in history, is merely the man who is peculiarly alert to this situation, and peculiarly—and, perhaps, unnecessarily—uncomfortable at finding himself in it. Often enough, no doubt, it has been some religious or practical need that has set him to looking for the contradictions in the current opinions; but in so far as his revision of those opinions has been philosophical, the motive that shaped it has been the demand for consistency in the explication of the conceptual necessities implicit in the facts of experience. We are not called upon here, however, to review the whole history of metaphysics; and it is therefore not possible to point out in detail how, at nearly all the great steps of philosophical transition, the method, both of metaphysical criticism and of metaphysical construction, has consisted in some special application of the two logical maxims involved in the principle of contradiction, in its broader meaning: *that which, after the completest analysis of the ideas involved, implies the coinherence, in a single subject, of concepts that the mind is incapable of combining in thought, cannot be real, and that proposition of which the opposite is, in the sense just specified, inconceivable or self-contradictory, must be true.*

It suffices for our present purpose to recall the manifest fact that Kant's more immediate 'dogmatic' predecessors, Leibniz, Wolff and Baumgarten, so far from constructing their metaphysical edifices without first examining the foundations, had been entirely explicit in naming the criterion of *a priori* knowledge, through the use of which metaphysics was to be possible;¹ and had limited that criterion to the single

¹ In his criticism of Kant Eberhard declared that "die Leibnizische Philosophie ebensowohl eine Vernunftkritik enthalte, wie die Kantische; denn sie gründe ihren Dogmatismus auf eine genaue Zergliederung der

principle of contradiction—or, to give it a name that better covers their full meaning, the principle of the compossibility of concepts. There had, moreover, during the period just before the appearance of the critical philosophy, been taking place a progressive clearing up of the significance and scope of this principle, and an especially determined effort to elucidate the whole question of the nature of *a priori* judgments. Since this was the case it will be of use to inquire, first, just what Leibniz and Wolff meant by the principle of contradiction, especially in its relation to the question of “the possibility of synthetic judgments *a priori*”; and, second, to ascertain precisely what Kant's own views were about the validity and the reach of that principle. We shall find the results of such an inquiry somewhat surprising.

The principle of sufficient reason is still sometimes represented as holding in the Leibnitian system an independent place, virtually co-ordinate with the principle of contradiction. But in reality Leibniz fully recognised that this principle can apodictically establish no conclusions *a priori*; and Wolff either treated it as a special case of the principle of contradiction, or else attempted to justify it by a peculiar mode of argument, of which Kant would have been obliged to recognise the legitimacy on strictly ‘critical’ grounds. With the exception, then, of this last-mentioned argument, which cannot be dealt with here, Leibniz and Wolff rested the whole possibility of demonstrative proof or disproof in metaphysics upon the principle of contradiction, and professed to have no metempirical theoretical knowledge save such as could be gained through the use of that principle. Wolff takes pains to point out that even the Cartesian *cogito ergo sum* is nothing more than a special case of the sort of logical necessity which the principle establishes.

What, then, did these philosophers understand by the *Grund des Widerspruches*?

We must remember, to begin with, that Leibniz—a fact of which both Mr. Bertrand Russell and M. Couturat have made much, in their recent expositions of his doctrine—liked to call all judgments analytical, contingent ones no less than necessary; this because of the familiar truth of formal logic that the connotation of the predicate of a proposition is always embraced within the connotation of the subject. As M. Couturat points out, the whole metaphysics of Leibniz

Erkenntnisvermögen”. Upon this Kant remarked that, if such was the case then, indeed, “there is no dogmatism in that philosophy, in the sense in which our Kritik always employs the word” (*Reply to Eberhard*, 1^{te} Abschn.).

follows from the logical principle: "Dans toute vérité, universelle ou singulière, nécessaire ou contingente, le prédicat est contenu dans le sujet". But while Leibniz thus makes all judgments analytical in a sense, it is also true that he fully recognises a distinction corresponding to Kant's distinction between analytic and synthetic judgments. Some predicates are contained in their subjects essentially and inextricably, so that, lacking those predicates, the subject would cease to be itself, would become an inconceivability; in other words, the concept, as a whole, is made up of a complex of attributes, some one or more of which are inconceivable without the others. In other cases the inclusion of the given predicate with the several other predicates that make up the essence (or definition) of the subject is purely accidental; the several attributes do not cohere of necessity. In the latter cases, the connexion of predicate with subject can only be known *a posteriori*; the former class constitute the field where *a priori* reasoning is legitimate, and where necessary and eternal truths are to be looked for. It is, of course, true that Leibniz called propositions of this class identical propositions, their distinguishing mark being that their opposites involved self-contradiction. But by identity Leibniz did not really intend to mean mere tautology, and by contradiction he does not always signify merely verbal contradiction. It was, indeed, difficult for him to make out how he could mean anything else; but he was, none the less, firmly persuaded that the *Grund des Widerspraches* is no empty and sterile maxim, but the fruitful source of important insights; and he especially (if not always very successfully) exerted himself to prove its positive utility. Thus he remarks (Gerhardt vii., p. 299) that though there may seem to be nothing but a *coccyssus inutilis* in identical propositions, yet *levi mutatione utilia inde axiomata nascuntur*. This, to be sure, is a somewhat naïf way of putting it, and the examples which follow are hardly convincing; but it all shows Leibniz's unwillingness to take his principle in its strict and narrow sense. There are, moreover, he maintains, two distinct kinds of judgment included within its range of application: (1) identical judgments, of which the opposite is formally self-contradictory, e.g., A is A; (2) judgments *virtualiter identicae*, of which the opposite can be seen to involve contradiction only *per terminorum intellectum et resolutionem*—that is, only by an examination of the whole implicit connotation of the terms involved, showing that the two notions are 'impossible'. It is chiefly these latter, or "virtually identical," judgments which constitute the substance of our demonstrative knowledge, and especially

of metaphysics. Demonstration consists in just the process of conceptual analysis whereby the implied content or meaning of two concepts is thus brought out with such definiteness as to make clear to the mind the impossibility of thinking them together, and therefore the necessity of thinking each of them and the opposite of the other together. "Virtually identical" judgments, to be sure, always bring us back *ad identicas formales sive expressas*, that is, to propositions involving two "simple" concepts, the necessary coinherence of which, in the given proposition, is manifest because the opposite of that proposition involves an explicit and literal contradiction: "Manifestum est omnes propositiones necessarias . . . ad primas veritates revocari possunt, ita ut appareat oppositum implicare contradictionem et cum identica aliqua sive prima veritate pugnare" (Gerhardt vii., p. 300).

There is still, it is true, in all this a singular inconsistency, or failure in clear thinking, on the part of Leibniz, which Mr. Bertrand Russell has already noted (*Philosophy of Leibniz*, p. 18). If the *primæ veritates* are literally "identical" propositions—A is A, B is not non-B—and if other necessary propositions are demonstrable only in so far as they are reducible (by the process of definition of the concepts involved) to such *primæ veritates*, then nothing but identical propositions can be really demonstrable at all—the principle of contradiction can never help us to prove anything more than that a thing is itself and is not anything not-itself. And again, to note another aspect of Leibniz's confusion—if all demonstration consists in definition, and if definition is the analysis of complex concepts into truly simple ones—then, once more, between these simple concepts there can be no relations except those of identity and (mere) difference, and therefore no possibility of demonstrating any synthetic truths. For it is not clear how a genuinely simple concept can contain within itself the necessity for the coinherence with itself of other and distinct concepts, or even any special or preferential repugnancies towards any particular other concepts. If the fundamental concepts were really simple in their connotative content, they would be a sort of logical atoms, or windowless monads, capable, perhaps, of entering casually and contingently into any kind of intellectual combination, but not necessitated by their own nature to enter into (or to refuse) any. And so we could discover no really instructive logical relations between distinct ideas, could find in a given subject no necessary coinherence with any predicate except its own simple and unanalysable self. And so, once more, no truly synthetic judgments *a priori* would be possible anywhere.

even in mathematics; and metaphysics, possessing no means of demonstration except the Principle of Contradiction, would indeed be condemned to perpetual sterility.

We must, then, recognise this blunder in Leibniz's treatment of the Principle of Contradiction. By describing the judgments based upon that principle as "identical"—by regarding the relation between subject and predicate in such judgments as purely analytical, and then further treating both concepts as ultimately "simple" notions—he undeniably destroys by implication the possibility of constructive metaphysics; and by his confused thinking upon the point he is, unquestionably, largely responsible for Kant's aberrations in the matter of the distinction between synthetical and analytical judgments. But on the other hand, one must repeat that Leibniz intended no such result. He fully meant his Principle of Contradiction to be a positive and constructive principle; and if he habitually employs the sort of language that I have quoted, implying that there are no necessary relations between any two distinct simple concepts except that of bare non-identity, it is also true that there is an essential and frequently reiterated point in the Leibnizian system which implies exactly the contrary. This is to be seen in Leibniz's doctrine of definition. Definition consists in forming a complex idea by the conjunction, in a single meaning, of several simple ideas—or of less complex ideas which are ultimately resolvable into simple ones. The contrary process, as we have already seen, is analysis—the taking apart of the complex which definition puts together, and so the eventual discovery of the simple conceptual elements of which it is composed. Leibniz, now, on the one hand, always insists that the analysis of a definition must bring us to such simple and indefinable concepts; but on the other hand, he constantly insists that definition is not an arbitrary process but is always (when legitimately performed) limited from the outset by the requirement that the notions united shall be "compossible," compatible with one another.¹ But these two contentions taken together are equivalent to the assertion that there may subsist, even between ultimately simple and indefinable concepts, relations of incompatibility. For if there were no such relations of ultimate incompatibility, definitions *would* be arbitrary, and any conjunction of *positive*

¹ Gerhardt iii., 443: "Les définitions ne sont point arbitraires, et on ne peut point former les idées comme l'on veut. Car il faut que ces idées qu'on prétend former soient véritables, c'est-à-dire, possibles, et que les ingrédients qu'on y met soient compatibles entre eux." So frequently elsewhere.

simple concepts into a single notion would be possible and legitimate. In such a case, though you would not be entitled to say that a triangle is a non-triangle, there would be nothing to prevent your saying that a triangle is a parallelogram. For if some one urged that a triangle is definable as a three-sided figure while a parallelogram has four sides, and that three-sidedness and four-sidedness are incompatible, one would have to ask: How, unless "simple" concepts have relations of fixed incompatibility *inter se*, can I know that what has three sides cannot have four sides? It could not be merely because the two concepts are two, *i.e.*, merely distinct; for three-sidedness and whiteness are also distinct, yet no objection arises when I define a figure as a white triangle. If there are incompatibilities anywhere in definitions, they must inhere in the original elements, the primary concepts, of which the definition is made up; and if there were, contrariwise, no such original incompatibilities—self-evident, not capable of being demonstrated by further definition, and not to be confused with mere non-identity—everything under heaven in the way of a definition would be permissible. In asserting, then, that definitions are not arbitrary, Leibniz plainly points to the affirmation of ultimate repugnancies to coinherence between distinct and positive concepts; and thus to the affirmation that *synthetic* relations of impossibility, on the one hand, of necessary coexistence, on the other—are to be found, in some cases, between the ultimate and irreducible ideas upon which our thinking finally depends.¹

As regards Leibniz, then, we must sum up the case thus: He sought to give definiteness and self-evidence to the method to be used in philosophical construction, by reducing the grounds of all *a priori* reasoning to a single principle. But in his treatment of this principle he fell into a twofold and inconsistent doctrine. On the one hand, in the pursuit of extreme rigour and simplicity in the definition of his ultimate criterion of truth, he tended to reduce it to the useless and trivial principle of the mere self-identity of concepts. But on the other hand, in another part of his imperfectly concatenated system, he plainly implied that there exist synthetic relations of compatibility and incompatibility between several distinct concepts, and that by the elucidation of these relations, important and significant truths *a priori* may be discovered. And in the form of this open choice between

¹ This point has already been clearly set forth by Mr. Russell (*Philosophy of Leibniz*, *loc. cit.*).

unharmonisable alternatives Leibniz left the problem of metaphysical method to his successors.

What has rarely been remarked is that those successors—the immediate predecessors of Kant—took up the problem and gave a reasonably clear answer to it; that to the fundamental Leibnitian principle they gave an enlarged but an explicitly defined meaning, corresponding to the second and sounder of the alternatives suggested by Leibniz; that between this enlarged meaning and the narrower one from which Leibniz had not fully distinguished it, they drew an unequivocal distinction, corresponding to Kant's distinction between synthetic and analytic judgments; that they thus answered in advance Kant's question: "How are synthetic judgments *a priori* possible?"—and answered it in a sense to which Kant could not consistently have made objection.

It was, of course, Wolff who accomplished this advance upon the position of Leibniz; Baumgarten, and Kant's contemporary and critic, Eberhard, did little more than rearrange or expand Wolff's ideas. What Wolff did was, in the first place, distinctly to abandon the theory that the only thing that you can logically discover *a priori* about any concept is that it must always mean whatever it happens to mean. On the contrary, he remarks in an instructive passage of the *Horie Subsecivæ* (1730, vol. i, p. 154), we ought to recognise that there are such things as *notiones fecundæ*—"pregnant concepts"—of which the peculiarity is that they contain *determinationes rei, per quas cetera quæ rei conveniunt, colligi possunt*; in other words, they are such that *ex iis, quæ in iisdem continentur, certa ratiocinandi lege colliguntur alia quæ in iisdem non continentur*. It is because it is a fact of psychology that there are such pregnant notions, that we are able to frame a number of propositions *quarum prædicatis posititis, ponuntur alia ejusdem rei prædicata*. Here, then, we find Wolff asserting that some ideas contain within themselves—inseparable from, yet not expressed in, their formally defined essence—necessary implications as to their relations of co-predicability or incompatibility with other ideas; and that meanings are thus organically interconnected.

Now in the technical logical and metaphysical treatises of Wolff and his school, the theory here implied as to the grounds of the legitimacy of synthetic judgments *a priori* is set forth with great fulness and definiteness—and copious iteration. In summarising the doctrine I shall quote in part from the *Aeroasis Logica* of Baumgarten, which, while following Wolff's expressions without significant deviation, is sometimes more concise and compact. Logic, says Baumgarten,

taken in the strictest sense, is precisely the science which shows how knowledge *a priori* is to be had (*scientia cognoscendi a priori*). Now "whatever is known *a priori* is known *ex internis veritatis characteribus*"; by this is meant, in modern language, that the presence of a *a priori* knowledge is to be verified essentially by a *psychological* fact, namely, the actual inability of the mind to divorce certain predicates from one another. There are two kinds of universal judgment, and only two, which are characterised by this inward compulsiveness or necessity. Whereas in all other judgments predication is justified only *a posteriori*, since the subject is, as such, found to be thinkable as a single coherent notion without the implication of the given predicate—in these two cases predication is necessary, and therefore valid universally and *a priori*, for the reason that the denial of the predicate carries with it for the mind the disappearance of the subject as a consistently definable and thinkable notion.¹ These two sorts of judgment *a priori* are distinguished from one another with respect to the manner in which the inseparability of predicate from subject is grounded. The first class is that of identical propositions, in which the predicate is merely the whole (*essentia*) or a part (*essentiale*) of the attributes included in the definition of the subject. Such propositions are, evidently enough, axiomatic, that is to say, necessary yet indemonstrable truths; but they are purely tautological and add nothing to our knowledge. The second class of axioms is the one which is made possible by the existence of *notiones fecundæ*, and yields us, therefore, pregnant and instructive truths. Its logical character consists in this, that the predicate in such propositions is a "property" (*attributum, Eigenschaft*) of the subject. Whereas in the merely identical proposition, or definition, the several predicates are merely *put* together by the mind to make the chosen meaning, and do not co-determine the presence of one another, two "properties," on the other hand, *stick* together as inseparable "*joint-determinations*" of any subject into the definition of which either of them is introduced—even though the framer of the definition may have meant to admit only one of them into his proposed meaning.² The test of a "property," once more, lies in the

¹ "Notæ entis sunt vel necessariae et immutabiles, quibus sublati tolleretur ens; vel contingentes et mutabiles, quæ possunt adesse et abesse salvo ente. Ad priores essentia, essentialia et attributa pertinent." From *Acroasis Logica* in Toellner's edition (1773), § 171. The preceding citations are from other sections of the same.

² Wolff, *Philosophia rationalis sive Logica*, 1728, §§ 64, 65: "Ea quæ constanter enti cuidam insunt, quorum tamen unum per alterum non determinatur essentialia appello. . . . Ea quæ constanter insunt, sed per essentialia simul determinantur, attributa dico."

subjective necessity of thinking the predicates together; no other test can be either had or imagined.¹

Wolff, then, on the basis of this distinction between judgments *a priori per essentialia* and judgments *per attributa*, adds to the enumeration of the axioms (underlying mathematics and metaphysics) that are purely identical, another class, not clearly recognised by Leibniz of a 'pregnant' or synthetical character. "Si definitum sumitur ut subjectum, et de eo prædicatur quidpiam, quod notis ad definitionem spectantibus, in ejus notione animo præsentē, indivulso nexu cohæret: propositio axioma est" (*Philosophia rationalis sive logica*, § 273).

In view of all this we may well ask, as Eberhard asked, to Kant's great irritation, shortly after the promulgation of the critical philosophy: How can one say that the so-called 'dogmatists' neglected to undertake a preliminary *Vernunftkritik*, or neglected to distinguish between analytic and synthetic judgments *a priori*, or neglected to show the logical justification of judgments of the latter sort? And if one accepts the principle upon which this last-mentioned justification rests, how is one entitled to reproach those who professed to found their metaphysics upon no other principle, for uncritical dogmatists?

These questions bring us to the essential issue upon the settlement of which must depend one's estimate of Kant's genuine originality and historic importance as an epistemologist. Metaphysical methodology had culminated just before his time in an explicit limitation of all *a priori* philosophising within the range where the testing of propositions by the principle of contradiction,² in an enlarged sense, is possible, and in an equally explicit indication of just what that enlarged sense was to mean. It is, therefore, impossible for any one

¹ Wolff puts it thus in his German logical treatise: "Wenn nun zwei Gedanken so beschaffen sind, dass der andere notwendig statt findet, wenn man den ersten heget, oder dass ich mir das andere notwendig denken muss, wenn ich von einem Dinge das erste gedanke, indem nämlich durch das erstere das andere mit determiniret wird; so stimmen die Gedanken mit einander überein. Kann ich aber das andere von einem Dinge unmöglich denken, wenn ich mir das erste von ihm gedanke: so streiten meine Gedanken wider einander, oder einer widerspricht dem andern" (*Vernünfftige Gedanken von den Kräften des menschlichen Verstandes*, 6te Aufl., 1731).

² I refer both forms of the *a priori* judgment, in the Wolffian classification, to the principle of contradiction, although the phraseology of different members of the school appears to be inconsistent upon this point. Eberhard, for example, prefers to label judgments *a priori per attributa* as examples of the "principle of sufficient reason". The question, however, is merely one of nomenclature; and Wolff himself certainly appears to me to intend the subsumption of both forms of *a priori* reasoning under the principle of contradiction.

to judge Kant intelligently, or to know where he stands historically, who has not determined the precise attitude which Kant took towards this Wolffian theory of knowledge. There are three possible positions which Kant might have assumed, in order to maintain, in some fashion, his charge of 'dogmatism' against his forerunners; and it is essential to determine which of the three he adopted—or whether he wavered between two or more of them. He might, in the first place, have held that the principle of contradiction, even in its narrowest Leibnitian sense, is not applicable to reality as such, but only to the phenomena of experience; in this case the contrast between the 'dogmatic' systems and the Kantian criticism would undeniably be radical. Kant might, again, have held that the principle is valid *a priori* for all Being, noumenal as well as phenomenal, but only in so far as it is purely analytical; that judgments based, not upon formal tautology or formal contradiction, but upon relations of coinherence or incompatibility between distinct and positive ideas are (as Wolff's language had suggested) synthetical; and that as synthetical, such judgments can have no *a priori* validity for *either* phenomena or noumena. In this case, also, he would have presented a fairly definite and significant, though somewhat paradoxical, antagonism to the method of Wolff and his school. Or, finally, Kant might have held that the principle is, in its fullest sense, valid *a priori*; that a judgment based upon the discovery of implicit incompatibilities between the subject and predicate of the contrary proposition, no less than one based upon explicit and verbal inconsistencies between them, is legitimate, and applicable to reality *überhaupt*; but that certain of the special conclusions concerning God, the soul, etc., which his predecessors had sought to justify by appealing to the principle, are not really inferrible by means of it. In this last case Kant could not properly have charged his predecessors with a radical error of method; he could fairly have charged them only with errors of formal logic, in the application of a valid method to certain special problems. And he could not in consistency have maintained that an *a priori* science of metaphysics is impossible; for he would virtually have admitted that metaphysical conclusions are possible wherever the principle of contradiction can be carried—wherever incompatibilities or necessary implications between ultimate concepts can be made out. Such are the issues, in the interpretation and criticism of Kant, which depend upon our answer to the question: Which of these three positions did he actually assume?

Laas has already raised the inquiry whether Kant regarded the principle of contradiction in general as a valid criterion of the nature of reality *an sich*; and he has justly insisted that the point is one of capital importance.¹ "Upon a philosopher," Laas observes, "who places between our world of time and space and the world of reality as such a chasm so wide and deep that for the latter the most conflicting possibilities remain open, it is decidedly incumbent to give a definite answer to such questions as these: Is the formula (of the impossibility of the self-contradictory) valid 'only in relation to a sensuous perception'? Is its extension to things in themselves inadmissible? Does it apply only to phenomenal existence? For who would venture to declare that there are other forms of being besides those known to us, and then deduce from the mere concept of Being the conclusion that all Being must be free from self-contradiction?" Important these questions certainly are; but there can be no doubt about Kant's answer to them. His declaration on the subject is precisely the declaration of which Laas speaks. In both the earlier and the later period of his thinking, Kant adheres consistently to the view that an object in which self-contradictory predicates are said to be united is not truly an object of thought at all, but a mere *nihil negativum irrepräsentabile*. In his earliest philosophical writing, the *Dilucidatio Nova*, Kant, in criticising the customary Wolffian way of formulating the principle of contradiction expresses only the more clearly his recognition of the importance of that principle in metaphysics. Under the name of a single formula, he maintains, philosophers have really been making use of two distinct principles, namely, *impossibile est idem esse ac non esse* and *cujuscumque oppositum est falsum, illud est verum*. These two are not, Kant thought, reducible to one another; but they are equally and independently valid. As an instrument of philosophical proof the latter is the more important. In the essay on the *Idea of Negative Magnitude* Kant declares that the self-contradictory is *gar nichts*; and in the paper on "The Only Possible Ground for a Demonstration of the Existence of God" he writes: "All that is self-contradictory is inherently impossible. . . . This logical repugnancy I call the formal character of inconceivability (*Undenklichkeit*) or impossibility." Similar expressions are abundant in the writings of the so-called critical period; e.g., from the *Reply to Eberhard*: "what-ever does not agree with this principle (of contradiction) is

¹ Kant's *Analogien der Erfahrung*, p. 33.

obviously nothing at all; for it is not even an idea (*Gedanke*);" and from the *Progress of Metaphysics*: "anything of which the idea is unthinkable, i.e., anything of which the concept contradicts itself, is an impossibility". The passage in the *Kr. d. r. V.* (first ed., p. 150) should be familiar: "Whatever the object of our knowledge may be, and whatever the relation between our knowledge and its object, it must always be subject to that universal, though merely negative, condition of all our judgments, that they do not contradict themselves. . . . The Principle of Contradiction is a general though negative criterion of all truth. . . . No cognition can run counter to that principle without destroying itself."

Kant's general recognition of the *a priori* validity and importance of the principle of contradiction as an absolute criterion of the nature of reality is thus unmistakable. Did he, however, accept the principle in one of those modified and restricted senses which I have indicated as open to him?

The answer must be that Kant's attempts, in the writings of the critical period, to tell what he takes the principle of contradiction to mean, are characterised, not only by a curious vagueness and confusion of ideas, but also by a persistent ignoring of just that distinction between the two kinds of judgment *a priori* which Wolff and Baumgarten had made so essential. One point, indeed, is clear: Kant always speaks of judgments resulting from the principle of contradiction as purely "analytical". This, however, does not settle much more than a question of nomenclature; the usage of Wolff's own disciples was not well settled upon this point. The important thing is not so much to determine whether the relation of predicate to subject in judgments *per attributa* can best be called analytical or synthetical—there are intelligible reasons for calling it either—but whether such judgments are legitimate at all, and what their logical nature is. And here Kant writes as if he had read nothing in German philosophy since Leibniz—and only a part of Leibniz.

For, in the largest class of passages on the subject, Kant goes on as if nobody had ever suggested the possibility of finding in judgments *per impossibilitatem contrarii* anything more than the *coccyismus inutilis* which even Leibniz had declared that they were not. In "analytical judgments," we are told, the connexion of predicate with subject *durch Identität gedacht wird*; and hence "our knowledge is in no way extended by them," their only service being "to put the concepts that I already possess into better order, and to

make them more intelligible to myself" (*Kr. d. r. V.*, first ed., pp. 7, 8). In the *Prolegomena* Kant goes so far as to say that the notion which serves as the predicate of such a judgment is actually always expressly present to the mind when the subject is thought; the judgment "expresses nothing in the predicate but what has already been *wirklich gedacht* (though not *ausdrücklich gesagt*) in the subject". Leibniz, in his narrowest definitions, would have avoided such language; for he at least placed judgments *virtualiter identicae* side by side with the purely tautological ones. And occasionally Kant himself remembers that concepts sometimes implicitly involve more than one happens, at any given moment, consciously to think in them. He then adds that the predicate of an analytical judgment may be contained in the subject "in a confused manner," or "without full consciousness". What this vague qualification precisely means Kant does not further explain. It apparently refers, not to the implicit interconnexion of "properties" in the connotation of an idea, but merely to the fact that people sometimes forget just what some of the *essentialia* are that they are accustomed to signify by a term. The qualification cannot, therefore, be construed as equivalent to the admission of the distinctness and the legitimacy of *a priori* judgments *per attributa*.

So far, then, and considering only Kant's principal writings, we must say, not that Kant rejects the position of the 'dogmatists,' but that he neglects to face or to oppose it at all. With a degree of obtuseness rare in history, he entirely failed to apprehend the distinction that had been the principal result of the previous half-century of reflexion upon the criteria of truth in mathematics and metaphysics—the distinction, namely, between *a priori* judgments *per essentialia* and *a priori* judgments *per attributa*—even though this distinction contained an answer to just the question which he himself declared to be the fundamental one in all philosophy. His attacks upon his predecessors implied that, having no criterion of truth *a priori* save the principle of contradiction in its narrowest analytical sense, they proceeded none the less (in their ignorance of Hume) to construct an *a priori* system of metaphysics. But since the criterion which they used was quite other, and since their reasons for accepting it had been carefully explained, Kant cannot be said to have brought any pertinent criticism to bear upon their position at all. The longer treatises nowhere make it certain that, if Kant had grasped the Wolffian distinction, he would not have accepted the Wolffian method.

Fortunately, however, Kant was reminded of this dis-

inction by one of his contemporary critics; and in his reply to that criticism we find him at last brought to face the real issue. Eberhard's *Philosophisches Magazin*, during the brief period of its issue (1789-90), was devoted chiefly to proving that Kant had not rendered Leibniz and Wolff obsolete, and that he even did not depart so widely from their doctrines as he appeared to suppose. It was in the execution of this task that Eberhard pointed out those obvious facts to which the present paper has again called attention. Long before Kant's *Kritik*, Eberhard insisted, a distinction equivalent to that between analytical and synthetical judgments had been familiar in the Wolffian school. "Analytical judgments are those whose predicates express the essence, or a part of the essence, of the subject (*das Wesen, oder einige von den wesentlichen Stücke, des Subjekts*); those of which the predicates express qualities that do not belong to the essence are synthetic." Now synthetic judgments are valid *a priori* when (and only when) "their predicates are 'properties' (*attributa*) of the subject, that is, determinations which do not belong to the essence of the subject, yet have their sufficient ground in that essence". When, now, this and much more of a similar sort had been publicly pointed out, it was manifestly incumbent upon Kant to define plainly his position with respect to the central epistemological doctrine of the Wolffians, which he had previously ignored.

Plain and unequivocal his answer¹ is not; yet in the end it amounts to an abandonment of his case against the 'dogmatists'. Here was Kant's opportunity, if he really wished to set his theory of *a priori* knowledge in sharp contrast with that of the older school, to say, in so many words: 'I deny that the principle of contradiction is susceptible of the extension which Wolff has given to it; I do not recognise the existence of any such necessary relations of cohererence between distinct concepts, going beyond the purely formal necessity that a concept shall be identical with itself'. But so far from doing anything of the sort, Kant readily accepts Eberhard's (that is, Wolff's and Baumgarten's) distinction between *essentialia* and *attributa*, and acknowledges that the latter are no less necessarily, though they are less directly, connected with their subjects, than are the former. In repeat-

¹ *Ueber eine neue Entdeckung, nach der alle Kritik der reinen Vernunft entbehrlich werden soll* (1790). To any who wish to understand Kant's relation to earlier logic and metaphysics, and so to determine his place in the history of those sciences, this *Reply to Eberhard* is one of the most important of his writings—for reasons that are made apparent in the text. It is, however, full of flounderings and self-contradictions.

ing and making his own Eberhard's classification of the ways in which predicates may be related to subjects *a priori* Kant even proposes an emendation of the technical phraseology, which has the effect of bringing out all the more clearly the principle that, in *attributa*, we have predicates which do not belong to the definition of a concept, and yet cannot be negated of it without destroying its logical possibility. The passage runs as follows: "A predicate which is ascribed to any subject by an *a priori* judgment is thereby declared necessarily to belong to that subject, or to be inseparable from it. Such predicates are said to belong to the essence, or the inner possibility, of the concept (*ad internam possibilitatem pertinentia*). Consequently all propositions that profess a *priori* validity must have predicates of this character. All other predicates (those, namely, which are separable from the concept without destroying it) are called extra-essential marks of the subject (*ausserwesentliche Merkmale, extraessentialia*). Now predicates of the first sort may belong to the essence in two ways, either as constitutive elements of it (*Bestandstücke, constitutiva*), or as consequences of the essence that have in it their sufficient ground (*ut rationata*). The former are called essential elements (*wesentliche Stücke, essentialia*), and, as such, contain no predicate that could be deduced from any other predicate contained in the same concept; and in their totality they make up the logical essence. The latter are called properties (*Eigenschaften, attributa*)." Kant, then, here grants that there may be predicates, technically to be named *attributa rationata*, which form no part of the *essentialia* of a concept, as it is defined, but yet are indispensable to the *interna possibilitas* of it. This is merely another way of saying—which is the substance of the Wolffian theory—that not only tautological judgments but also judgments *per attributa*, are legitimate sources of *a priori* knowledge. And the whole realm of metaphysics, according to Wolff and (in his real intention) according to Leibniz, lay within the limits of this last-mentioned class of judgments, the possibility, validity and potential fruitfulness of which Kant now admits.¹

¹ Paulsen has summarised this rather important part of the *Reply to Eberhard* in a footnote in his volume on Kant in the *Klassiker der Philosophie* (translation of Creighton and Lefevre, p. 143). Since the book is widely read, it is perhaps worth while to point out that here, as in several other instances, Paulsen goes somewhat seriously astray in his exposition. For he represents Kant as classifying predicables of the sort called *attributa* or *rationata*, among the "*extraessentialia*, which can be separated from the concept without affecting its nature". But Kant plainly and repeatedly classifies *attributa* as one of the two kinds of predicates that are *ad internam possibilitatem pertinentia*, inseparable from

Kant, however, neither fully grasps nor long remembers the significance and bearings of his own admissions; and he attempts, furthermore, to save the originality of his doctrine by insisting upon two additional points in regard to these "judgments in which the predicates are inseparably connected with the subject, though not a part of its logical essence". To these two points the whole distinction between the 'dogmatic' and the 'critical' method now reduces itself.

(1) In the first place, Kant contends, Eberhard was wrong in regarding all judgments *per attributa* as synthetical. They may, he urges, be analytical; the distinction between 'analytic' and 'synthetic' runs, so to say, crosswise through them. Eberhard had supposed that any *a priori* judgment of which the predicate is an *attributum*—expressing, in Kant's words, something necessarily belonging to the subject, "yet only as a *rationatum* of the essence, not the essence itself nor any part of it"—is *ipso facto* shown to be synthetical in character. But in reality, Kant declares, "this shows nothing more than that the predicate (mediately, it is true, yet still as a consequence of the principle of contradiction) is drawn out from (*hergeleitet aus*) the concept of the subject; so that the proposition, notwithstanding the fact that it expresses an *attributum*, may still be analytic, and therefore lacks the distinguishing mark of a synthetical proposition". In thus arguing that some judgments of this sort are analytical, and are authorised by nothing less than the principle of contradiction, Kant commits himself to a still more thoroughgoing admission. He succeeds, indeed, in establishing a point of verbal opposition to Eberhard; but he at the same time gives up all grounds of real opposition to the substance of the Wolffian theory of *a priori* knowledge. For it now turns out that judgments in which, by virtue of some necessary connexion between the concepts, predicates (as Kant elsewhere puts it) are "developed out of" (*entwickelt aus*) the subject may be analytical, and have the sanction of "the highest principle of all analytical judgments". But there is, as we have seen, nothing that Kant asserts more emphatically and more unequivocally than that all analytical judgments, involving the principle of contradiction, are valid *a*

the concept (*vom Begriffe unabtrennlich*), and capable of being deduced from the essence of the concept as a necessary consequence thereof. Paulsen's error, however, is doubtless chiefly due to a characteristic awkwardness in Kant's own use of these technical terms. As Kant employs it, the term *essentialia* is not, as one would expect, the antonym to *extra-essentialia*, and the equivalent of *ad essentialia pertinentia*; but is merely a species under the latter genus, the other species consisting of *attributa*.

priori of all possible reality, and in need of no further justification or explanation. Kant, in short, for once abandons (though only to resume it on the next page) his usual language about analytical propositions; and includes within their range some judgments *per attributa*, which include distinctly more than need be *wirklich gedacht* in the original conception of their subject. As for the mere question of phraseology, we need not further discuss whether Kant or Eberhard is right. Eberhard had sensibly remarked—what Kant could never be brought to recognise—that “the controversy as to whether a proposition is analytical or synthetical is a controversy of no importance for the determination of the logical truth of the proposition”.¹ What is important is the determination of the question whether or not there really subsists between two given concepts, not defined as identical in essence, such a relation that, if the first is negated of the second, the latter becomes unthinkable within the terms of its *own* essence. When this is admitted—and Kant now admits that such a relation is possible—the rest is merely a dispute as to the sort of metaphor which may most felicitously express this logical fact.

(2) Thus far Kant has committed himself to the admissions (a) that some propositions in which the predicates are *attributa rationata* of the subject, are analytical; (b) that all analytical propositions are true *a priori* of reality in general. He further urges, however, that some propositions containing *attributa* as predicates are synthetical; and he insists that none of his precursors had shown—as he had done—how, in this case, such propositions can be known to be valid. Here Kant evidently has in mind the theorems of mathematics. These, he was sure, could only be called synthetical propositions; and if synthetical, they required some justification other than what Baumgarten would have called “the internal marks of truth,” their actual coinherence in the mind. This justification Kant believed that he alone had discovered, in his celebrated doctrine of the *a priori* percepts. The reason why synthetical judgments are possible *a priori* is that they are mediated through a *reine Anschauung*. Here is where Kant finally endeavours to come to a really significant issue with his critic; and it is desirable to hear his own words, which, in part, are not susceptible of adequate translation: “Wenn gesagt wird, dass ich sie über die gegebenen Begriffe hinaus, auch ohne Erfahrung, vermehren, d. i. *a priori* synthetisch urteilen könne, und man setzte hinzu,

¹ *Philosophisches Magazin*, 1789, p. 331.

dass hierzu notwendig etwas mehr erfordert werde, als diese Begriffe zu haben, es gehöre noch ein Grund dazu, um mehr, als ich in jenen schon denke, mit Wahrheit hinzutun . . . so will ich wissen, was denn das für Grund sei, der mich, ausser dem, was meinem Begriffe wesentlich eigen ist und was ich schon wusste, mit mehrerem und zwar notwendig als Attribut zu einem Dinge Gehörigen, aber doch nicht im Begriffe desselben Enthaltenen bekannt macht."¹ In so far as they are synthetic, then, we must look farther for a "ground of the possibility" of these judgments containing *attributa* as predicates. But, now, "any one may see that, in what I have already set forth as the summary result of the whole analytical part of the *Kritik* of the Understanding, I have therein explained, with all needful explicitness, the principle of synthetic judgments in general, namely: that they are not possible except under the condition of a perception underlying their subject—one which, when they are *a posteriori* judgments, is empirical, and when they are synthetic judgments *a priori* is a pure *a priori* percept. . . . Compare now with this the pretended principle which is presented in Eberhard's account of the nature of synthetic judgments *a priori*: 'They are judgments which affirm of the subject one of its *attributa*—that is to say, a predicate which necessarily but only derivatively (*nur als Folge*) belongs to the subject.' . . . Now one is justified in asking whether the ground for the affirmation of the predicate is to be sought for in the subject, according to the principle of contradiction—in which case the judgment would still be merely analytical; or whether the predicate is incapable of being deduced from the concept of the subject by the principle of contradiction—in which case the *attributum* is purely synthetic. Thus neither the name 'attributum,' nor the principle of sufficient reason, serves to distinguish synthetical from analytical propositions; if the former are to be affirmed *a priori*, one could say no more of them (according to this phraseology) than that their predicate is somehow or other grounded in the essence of the concept of the subject—and is therefore a 'property'—but not simply in consequence of the principle of contradiction. But how, as a synthetic property, this predicate comes to be bound up with the concept of the subject—when it cannot be *drawn out* of the subject by analysis—cannot be explained by the concept of a 'property,' so that Herr Eberhard's account of the matter is wholly barren. But the *Kritik* clearly sets

¹ Kant appears to have forgotten that, a few pages earlier, he had explained to us how predicates not contained in the essence may, by the principle of contradiction, be 'developed out' of a concept analytically.

forth this ground of the possibility of such propositions, showing that it can be nothing but the pure percept underlying the concept of the subject. Only in such a pure percept is it possible to connect a synthetic predicate with a concept *a priori*."

Thus the theory of the *reine Anschauung* constitutes the last trench into which Kant retires to defend his antithesis of dogmatism and criticism. About this theory three things may be said, of which only the two last are indispensable to our present inquiry. First, the whole idea of a 'pure' percept, which we are under no conditions to be allowed to think as a concept, and which gets some peculiar demonstrative efficacy from its perceptual character—is a logical chimera that belongs with the other hybrid monsters of antiquity. But this is unimportant. Second, and what is more to the point, the theory, though it were true, is, by Kant's own showing, not essential to the proof of the logical validity of the *a priori* judgments in question; and it is therefore irrelevant to the issue. Wolff and Baumgarten had, in effect, declared that, when you have analysed your concepts to the uttermost and still find that two of them, not defined as possessing the same essence, coinhere *indivulso nexu*, you have reached the ultimate point of verification: beyond this *de facto* psychological necessity, this "internal mark of truth," it is both needless and impossible to go.¹ Now even if it be a fact that a *reine Anschauung* 'underlies' our mathematical judgments, a knowledge of this fact is not necessary in order to establish the truth of those propositions *a priori* (in so far as they are true *a priori*); nor does ignorance of the fact subtract anything from the evidence of their truth. The fact would be an interesting piece of psychological information; but the truth of the propositions, as propositions *a priori*, would still require to be tested by inquiring whether, when the meaning of the concepts involved, as concepts, is fully understood, the contraries of the propositions prove to be inconceivable. All of which is admirably illustrated by Kant's own procedure when, in the *Kritik*, he

¹ This must not be understood as implying that there is anything in common between the Wolffian theory of knowledge and the uncritical affirmation of anything of which one has "clear and distinct ideas," or a strong "emotion of conviction". The prior analysis of concepts is presupposed, the careful framing of definitions, the clear discrimination of the several sorts of predicables, and the testing of *attributa* by the attempt to think the given definition with the given *attributum* negated. But the Wolffian logicians had rightly maintained that the touchstone in this final test can be nothing but the ultimate and inexplicable mental fact that the proposed negation is actually unthinkable.

undertakes to prove that Space and Time are pure percepts underlying the concepts of mathematics. He does it by showing that in mathematical judgments the predicates are "necessarily and universally" connected with the subjects *a priori*, and yet are not discoverable by a mere analysis of the definitions of the subjects. Geometry, for example, "is a science which determines the properties of Space synthetically and yet *a priori*. What, then, must the idea of Space be, in order that such a knowledge of it should be possible? It must, primarily, be a perception; for out of a mere concept no propositions can be drawn which go beyond the concept itself¹—as do the propositions of geometry. But this perception must be found in us *a priori*, and hence, must be a pure, non-empirical perception. For geometrical propositions are all apodictic, that is, they involve the consciousness of their own necessity; and such propositions cannot be empirical" (second ed., p. 41). Evidently, however, since the supposed fact that Space is a *reine Anschauung* is inferred from the fact that geometrical theorems are necessary *a priori*, the necessity and apriority of those theorems cannot in turn depend upon a proof that Space is a *reine Anschauung*. Kant here, in a word, not only accepts the logical method of the 'dogmatists,' but even uses it to establish that principle which, so far as mathematical reasonings are concerned, is in the same sentence supposed to show the illegitimacy of their logical method. His own language exhibits better than any commentary how irrelevant is the doctrine of the pure percepts to the epistemological questions concerning the criteria of *a priori* knowledge, which are the only questions at issue between himself and the Wolffians. And now, in the third place, the theory that judgments *a priori* presuppose a pure percept, refers only to mathematical judgments; and it therefore does not affect Kant's admission, already noted, that there may be valid *a priori* judgments of which the predicates are (like those in mathematics) *attributa rationata*, but which—being sufficiently explained by the principle of contradiction—do not require the mediation of any such pure percept.

Only one point more needs to be touched upon. It may be urged, in Kant's behalf, that he at least is distinguished from his predecessors—and is more 'critical' than they—in that he limits the scope even of our valid *a priori* judgments to "objects of possible experience," and professes no knowledge of the transcendent. Upon this much might be said, if

¹ Note again that this is inconsistent with the admissions which Kant makes in the *Reply to Eberhard*.

space permitted; but I must limit myself to two remarks. One is that, in Kant's own eyes, it is not upon this consideration that his distinction of 'criticism' from 'dogmatism' turns, but upon the question how, even within the narrower range, non-identical judgments may be justified *a priori*. The other remark is that Kant himself, as we have already seen, affirmed that no reality whatever "can possess the formal character of *Udenklichkeit*," that is, can correspond to a logically 'impossible' and self-contradictory concept. And inasmuch as he at first fails to deny, and in the end somewhat confusedly admits, that other predicates besides those contained in the definition of a concept may be involved in its *interna possibilitas*, and that other propositions besides tautological ones may be tested by the criterion of the inconceivability of their opposites—it must be said that, even on this point, Kant did not successfully differentiate his position from that of Leibniz and of Wolff.

And thus the whole distinction between 'criticism' and 'dogmatism'—in so far as it is intended to correspond to an historical contrast between Kant and his German predecessors—falls to the ground. The 'dogmatists' were not, in Kant's sense, dogmatic; Kant, in his principal writings, did not refute or even attack their real doctrine of the grounds of the legitimacy of non-identical propositions *a priori*; when eventually compelled by Eberhard to define his attitude to that doctrine, he accepted—though evidently without quite knowing what he was about—the essential principle of it; and he was himself unable to formulate any different doctrine of the grounds of the validity of such propositions—since the theory of the *reine Anschauung*, even in the restricted field where it applies, expressly presupposes the *a priori* legitimacy of synthetic judgments in mathematics, and so cannot be regarded as the logical ground of their legitimacy. Finally, by his inability to deny the general applicability to all reality of the principle of contradiction, in its wider as well as in its more literal use, Kant undermined in advance his professedly negative and agnostic position with respect to the possibility of metaphysics as a theoretical science.

V.—DISCUSSIONS.

ARISTOTLE ON THE LAW OF CONTRADICTION AND THE BASIS OF THE SYLLOGISM.

ONE form of the Law of Contradiction is—*a thing cannot have opposite attributes at the same time*. To understand the nature of this truth it is necessary to define what is meant by “opposite attributes”. Examples are plentiful: white—not-white; good—not-good; true—not-true; in general, A—not-A. The second of each pair is not meant to include everything in the universe except the first of the pair; for in that case the law of contradiction would not be true, since a thing can be at the same time white and not-white; for example, it may be white and hard. The negative, therefore, not-A, must be restricted in its signification to attributes within the *region* of A; thus not-white is restricted to all colours, with the exception of white; not-triangular to all figures except triangle. Within one region, therefore, the individuals constituting it are incompatible. But what constitutes a region? In the above examples, colour is one region, figure another; and the region is denoted by a general term. But it can be easily seen that while what I have called region and what is known as class notion here go by the same name,—colour or figure,—they are not identical. The origin of the class notion is, so we are told, the similarity of the individuals composing it; but this similarity can be no explanation of their incompatibility which makes them members of the same region. Thus colours are incompatible—a thing cannot be at the same time white and black; but it is not in virtue of the similarity of white and black, which causes us to subsume them under the same general term colour, that they are incompatible. Moreover, not all class notions consist of incompatibles; thus quality is a class notion, but not all qualities are incompatible.

This leads us to the question, Is it possible *a priori* to determine what attributes are incompatible? Even if we could be justified in saying that all attributes of the same sense are incompatible, the truth of the statement could only be determined by experience. But it is evident that this is not true. Quality, intensity, and pitch all belong to the sense of hearing, and yet they are compatible; colour and figure (plane) belong to the sense of sight, and yet they are not incompatible. We are therefore justified in saying that experience alone can tell us what attributes are, and

what are not, incompatible. If this be so, positive and negative may be nothing more than names of modes of consciousness found to be incompatible. If we designate the number of these incompatibles by n , and posit any one of them, A, all the other $n-1$ modes constitute not-A ; and the whole number of n incompatibles constitutes a region. The definition of region would then be an aggregate of incompatible modes of consciousness ; and it is clear that experience alone constructs these regions for us.¹ Opposite attributes, then, being positive and negative, and the latter being what experience finds to be incompatible, the law of contradiction quoted at the beginning of the paper reduces itself to the law of identity—a thing cannot have at the same time what experience finds it cannot have at the same time.


Moreover, if the above analysis be correct, it is conceivable that there might be a state of experience even if our present regions of incompatibles were dissolved. By this is not meant a chaos in which all things are and are not at the same time. All it involves is a state of thinking with the *a priori* element reduced to a minimum. If we were to construct a logic on this hypothesis, the implication of the assumption would be that the judgment A is B is to be taken at its face value, and no inference be allowed regarding not-B. Similarly the negative judgment A is not-B should be limited to its direct and explicit statement, and all *a priori* inference as to B be excluded. B and not-B, in other words, are to be treated, in accordance with this hypothesis, as B and C are in our actual logic. The psychological attitude of this hypothetical logic it is, of course, impossible for us to realise, as it is impossible to realise psychologically a fourth dimension or the meeting of parallel lines. All that can be done is to clear the ground, as it were, all around it, so that there shall at least not be any obstacles we can help in the way of approximating to the situation suggested ; and this is what I have attempted so far to do.

With the idea of the judgment as bearing no implications beyond its explicit statement, we have next to consider what would become of the syllogism. Those who assert that the syllogism is based on the law of contradiction would, of course, deny that a syllogism is possible on this hypothesis. Their assertion, however, seems to me not true.

The inference of the conclusion from the premisses is based simply on the right to repeat separately a judgment regarding an object or group of objects, which was made before regarding the same *plus* others ; and the law of contradiction is not at all involved in the inferential process as such. Thus in the syllogism :—

All A is B
All C is A
∴ All C is B

¹ This seems also to be the idea of Herbert Spencer, *Principles of Psychology*, ii., 423-424.

let the following group of dots  represent all A; then the major premiss predicates B of the entire number of dots in the group. The minor premiss tells us that All C is A, which means that all C is in the above group, say all those below the line. Then to say in the conclusion All C is B is to predicate of the dots below the line what was before predicated of these dots *plus* those above the line. No account was here taken of the law of contradiction. It is evident, therefore, that the syllogism would still remain, if the law of contradiction were banished from logic. To be sure, on the latter hypothesis the conclusion "All C is B" would not exclude "all C is not-B," but neither does it do this in our actual logic in virtue of the *syllogism*. It does this because the major premiss does it (the conclusion never adds to the major premiss), and the major premiss does it in virtue of the law of contradiction. The same result can be brought about without the law of contradiction by explicitly denying not-B in the major premiss; thus, "All A is B and not not-B". Then the conclusion, which does nothing more than repeat part of the major premiss, would here likewise state "All C is B and not not-B". The only difference is that that which our actual logic finds it unnecessary to state explicitly because it assumes it as true *a priori* and universally, our hypothetical logic would have to state explicitly on the strength of experience. Moreover, since the conclusion "All C is B" excludes "All C is not-B" solely by the authority of the major premiss, it is not even in the actual logic necessary to assume the law of contradiction in the minor premiss, "All C is A," for it is evident that the conclusion would still hold, if it were true also that "All C is not-A"; since the major premiss "All A is B" does not exclude not-A from being B.

Here one may urge, granting that the syllogism would survive this hypothesis, that all its usefulness would be gone. Of what use, one would say, can a syllogism be, the conclusion of which does not exclude its opposite? Does not all our action depend upon our certainty as to the exclusion of the contrary? My answer would be that the fault is not with the syllogism but with the judgment; for it is the latter that excludes or does not exclude the contrary; and the judgment as an expression of the result of experience cannot be blamed for not excluding what experience shows to be compatible, any more than the judgment in actual logic can be blamed for not giving us information upon an indefinite number of attributes which we should very much like to know. Thus "All A is B" tells us nothing about C or D or E.

The view here defended, that the syllogism does not presuppose the law of contradiction, is held by no less an authority in logic than Aristotle. In a passage in the *Posterior Analytics*, which I shall now proceed to discuss, Aristotle states the thesis and proves it; though, surprisingly enough, Waitz and his followers misunderstood its import.¹

¹ After this paper was written I found that Maier, *Die Syllogistik des Aristoteles*, ii., pt. 2, p. 238, note 3, understands the passage as I do.

The passage in question occurs *Posterior Analytics*, i., 11, p. 77a, 10-22, and reads as follows:—

τὸ δὲ μὴ ἐνδέχασθαι ἅμα φάναι καὶ ἀποφάναι οὐδεμίᾳ λαμβάνει ἀπόδειξις, ἀλλ' ἢ ἐὰν δέη δείξαι καὶ τὸ συμπέρασμα οὕτως. δείκνυνται δὲ λαβούσι τὸ πρῶτον κατὰ τοῦ μέσου, ὅτι ἀληθές, ἀποφάναι δ' οὐκ ἀληθές. τὸ δὲ μέσον οὐδὲν διαφέρει εἶναι καὶ μὴ εἶναι λαβεῖν, ὥς δ' αὖτως καὶ τὸ τρίτον. εἰ γὰρ ἐδόθη, καθ' οὗ ἄνθρωπον ἀληθές εἰπεῖν, εἰ καὶ μὴ ἄνθρωπον ἀληθές, ἀλλ' εἰ μόνον ἄνθρωπον ζῶον εἶναι, μὴ ζῶον δὲ μὴ· ἔσται γὰρ ἀληθές εἰπεῖν Καλλιᾶν, εἰ καὶ μὴ Καλλιᾶν, ὅμως ζῶον, μὴ ζῶον δ' οὐ. αἴτιον δ' ὅτι τὸ πρῶτον οὐ μόνον κατὰ τοῦ μέσου λέγεται ἀλλὰ καὶ κατ' ἄλλον διὰ τὸ εἶναι ἐπὶ πλειόνων, ὥστ' οὐδ' εἰ τὸ μέσον καὶ αὐτὸ ἔστι καὶ μὴ αὐτό, πρὸς τὸ συμπέρασμα οὐδὲν διαφέρει. τὸ δ' ἅπαν φάναι ἢ ἀποφάναι ἢ εἰς τὸ ἀδύνατον ἀπόδειξις λαμβάνει. . . .

Waitz' commentary on the passage reads as follows (the italics are mine):—

"Principium contradictionis quod dicitur in ipsam demonstrationem non assumitur, nisi etiam in conclusione expressum esse debeat: si A de omni B prædicari verum, non prædicari non verum sit, B vero de omni C prædicetur, A de omni C prædicari verum, non prædicari non verum est: in quo quidem syllogismo nihil interest (vs. 14), num A prædicetur et de B et de Non-B, B autem et de C et de Non-C. Nam si datum est animal prædicari de omni homine (εἰ γὰρ ἐδόθη ζῶον εἶναι τοῦτο καθ' οὗ ἄνθρωπον ἀληθές ἔστιν εἰπεῖν, vs. 15), etiam si verum sit animal prædicari etiam de Non-homine, dummodo homo sit animal, non-animal vero non prædicetur de homine, eadem utique proveniet conclusio, hanc dico, hominem quendam e.g. Calliam esse animal. (Perspicuitatis causa hic adiecimus apodosin, qualis esse debebat, quam Aristoteles et cogitandi et scribendi alacritate abreptus non omisit quidem, sed turbavit.) Item enim, etiam si Non-Callias homo sit, de Callia homo prædicabitur, non-homo vero non prædicabitur. Quare etiam si A et de B prædicatur et de Non-B (εἰ τὸ πρῶτον οὐ μόνον κατὰ τοῦ μέσου λέγεται ἀλλὰ καὶ κατ' ἄλλον, vs. 19), B autem et de C et de Non-C (εἰ τὸ μέσον καὶ αὐτό ἔστι καὶ μὴ αὐτό, vs. 20), dummodo Non-A neque de B prædicetur neque de C, tamen conclusio eadem utique erit 'A prædicari de C'. Verum principio contradictionis (vs. 22) non uti solemus in demonstratione recta, sed in deductione ad absurdum quae dicitur. . . ."

Edward Poste,¹ no doubt following Waitz, translates the passage as follows (italics mine):—

"That of two contradictory predicates one must be false, is never expressed in demonstration, but implied in all direct proof. When we syllogise, we assume that the Major is truly affirmed of the Middle, and not truly denied, without caring whether the Middle can be truly denied of the Major. And so with respect to the Middle and Minor. For if we assume that All Man is

¹ *The Logic of Science, a Translation of the Posterior Analytics of Aristotle*, with notes and an introduction by Edward Poste, M.A., Oxford, 1850.

Animal, and not not-Animal, it will be true that Callias is animal, and not not-animal; *even though not-Callias be also Man, and not-man be also Animal.* For the conclusion is not impaired though the Major be incommensurate to the Middle, and the Middle incommensurate to the Minor. The principle that one or the other of two contradictories must be true, is assumed in indirect proof; . . ."

I confess I fail to see, either in Waitz or in Poste, any connexion between the first sentence and the rest of the passage. Surely Aristotle does not come to tell us at this late date, after having treated of the syllogism with the minutest detail in the *Prior Analytics*, that in the first mode of the first figure the middle term need not be co-extensive with the major, nor the minor with the middle. And assuming that he does tell us this very thing, what has that to do with the principle of contradiction? Besides, what is the import of the first sentence? According to Waitz, it means apparently that the law of contradiction is not explicitly stated as a premiss unless it is to appear explicitly also in the conclusion. One fails to see the significance of the statement. If all Aristotle means to say is that, owing to the universal certainty of this law, it need never be expressed in the premisses, being always implied, why should its explicit appearance in the conclusion make any difference?

In addition to these more general considerations it will appear, on an examination of the text, that the words will not bear the meaning Waitz puts upon them. More especially the words τὸ δὲ μέσον οὐδὲν διαφέρει εἶναι καὶ μὴ εἶναι λαβεῖν—εἰ καὶ μὴ ἄνθρωπον ἀληθές—ὥστ' οὐδ' εἰ τὸ μέσον καὶ αὐτό ἐστι καὶ μὴ αὐτό cannot be interpreted as Waitz interprets them in the italicised lines above. Poste entitles his translation of this section, "Syllogism depends on the Axiom of Contradiction," and in an appendix (p. 135) attempts to show by a reference to the syllogism that the axiom of contradiction and the *Dictum de omni et nullo* are the same; both of which views are, as it seems to me, the exact opposite of what Aristotle intends here, as I shall proceed to show.

In the first sentence Aristotle makes the significant statement that the syllogism as such is independent of the principle of contradiction; that therefore the conclusion does not exclude its opposite unless the major premiss does so. He then proceeds to show this in the syllogism:—

All Men are Animals
Callias is a Man
∴ Callias is an Animal,

in which the exclusion of not-animal in the major premiss is responsible for its exclusion in the conclusion, even if the principle of contradiction should not hold in the minor premiss, and in the minor term; *i.e.*, even if it were true that Callias is man and not-man (εἰ καὶ μὴ ἄνθρωπον ἀληθές), and that he is Callias and not-

Callias (Καλλίαν εἰ καὶ μὴ Καλλίαν), still as long as man is animal and not not-animal, it would follow that Callias is animal and not not-animal. The reason for this is, he goes on to say, that the major term is more extensive than the middle, and applies to not-man as well as to man, and the middle term is more extensive than the minor and applies to not-Callias as well as to Callias; and therefore even if Callias is both man and not-man (εἰ τὸ μέσον καὶ αὐτό ἐστι καὶ μὴ αὐτό), this does not prevent the major term animal (and not not-animal) from applying to it. Similarly even if the minor term is both Callias and not-Callias, the major term still applies to it through the middle.

I should therefore translate the passage, with more precision than elegance, as follows :—

“That it is impossible at the same time both to affirm and deny, no demonstration assumes, unless it be necessary to demonstrate the conclusion in this manner [*i.e.*, excluding the opposite]. [In the latter case] the demonstration is effected by assuming that it is true to affirm the major term of the middle, and not true to deny it. But as to the middle term, it makes no difference if we assume that it both is and is not; and similarly with the minor term. For if we grant [*sc.* in the major premiss], that that whereof it is true to predicate man (even if it be true also to predicate not-man)—as long, at any rate, as we grant that *man* is animal and not not-animal, it will be true to say that Callias (even if he be at the same time not-Callias) is still animal and not not-animal. The reason is that the major term is predicated not only of the middle but also of something else, because it is more extensive [than the middle]; and therefore even if the middle is both itself and not itself, it will make no difference to the conclusion. But that everything must be either affirmed or denied is assumed by the demonstration known as *reductio ad absurdum*. . . .”

That my interpretation of the first sentence is correct is also proved from the last sentence, which refers to the principle of excluded middle (Waitz confuses the two). That Aristotle thought of them together is shown in a number of places in the *Metaphysics* where they are mentioned together as the bases of thought. Here he tells us that, whereas the method of proof known as *reductio ad absurdum* cannot be effected unless we assume the principle of excluded middle, the direct proof does not require the principle of contradiction, unless we want the conclusion to exclude its opposite. And in the latter case, too, it is sufficient to assume the law of contradiction in the major premiss; it is not necessary even then in the minor.

This being the true meaning of Aristotle in the above passage, it is next in order to see whether the view here expressed is consonant with views held elsewhere by Aristotle. In the beginning of the *Prior Analytics* (24 b, 28-30) Aristotle gives a definition of the *dictum de omni et nullo* as follows :—

λέγομεν δὲ τὸ κατὰ παντὸς κατηγορεῖσθαι, ὅταν μηδὲν ἢ λαβεῖν τῶν τοῦ ὑποκειμένου, καθ' οὗ θάτερον οὐ λεχθήσεται, καὶ τὸ μηδενὸς ὡσαύτως.

"We call that *de omni* predication, where it is not possible to take any individual denoted by the subject of which the other [*i.e.* the attribute denoted by the predicate] is not predicated; and *de nullo* predication is to be defined likewise." Farther on (25 b 32-40), a definition and illustration are given of the syllogism in the first figure; and the syllogism of the first mode is based directly upon the preceding definition of *de omni* predication:—

ὅταν οὖν ὅροι τρεῖς οὕτως ἔχουσι πρὸς ἀλλήλους ὥστε τὸν ἕσχατον ἐν ὅλῳ εἶναι τῷ μέσῳ καὶ τὸν μέσον ἐν ὅλῳ τῷ πρώτῳ ἢ εἶναι ἢ μὴ εἶναι, ἀνάγκη τῶν ἄκρων εἶναι συλλογισμὸν τέλειον . . . εἰ γὰρ τὸ Α κατὰ παντός τοῦ Β καὶ τὸ Β κατὰ παντός τοῦ Γ, ἀνάγκη τὸ Α κατὰ παντός τοῦ Γ κατηγορεῖσθαι· πρότερον γὰρ εἰρηται πῶς τὸ κατὰ παντός λέγεται.

"When, therefore, three terms are so related that the minor in its whole extent is the subject of the middle taken affirmatively, and the middle in its whole extent the subject of the major taken affirmatively or negatively, there must be a perfect syllogism of the two extreme terms. . . . For if A is predicated of all B and B of all C, A must be predicated of all C, for we have defined above what is meant by *de omni* predication."

It is thus seen that Aristotle bases the syllogism upon the *dictum de omni et nullo*, which is a definition and has nothing to say about the compatibility or incompatibility of the positive and its negative. A still clearer case of Aristotle's reducing the syllogism to a definition of *de omni* and *de nullo* predication can be made out by a reference to his treatment of the syllogism in the contingent mode (32 b 38-33 a 5):—

ὅταν οὖν τὸ Α παντὶ τῷ Β ἐνδέχεται καὶ τὸ Β παντὶ τῷ Γ, συλλογισμὸς ἔσται τέλειος ὅτι τὸ Α παντὶ τῷ Γ ἐνδέχεται ὑπάρχειν. τοῦτο δὲ φανερόν ἐκ τοῦ ὁρισμοῦ. τὸ γὰρ ἐνδέχασθαι παντὶ ὑπάρχειν οὕτως ἐλέγομεν. ὁμοίως δὲ καὶ εἰ τὸ μὲν Α ἐνδέχεται μηδενὶ τῷ Β, τὸ δὲ Β παντὶ τῷ Γ, ὅτι τὸ Α ἐνδέχεται μηδενὶ τῷ Γ· τὸ γὰρ καθ' οὗ τὸ Β ἐνδέχεται, τὸ Α μὴ ἐνδέχασθαι τοῖς ἢν τὸ μὴδὲν ἀπολείπειν τῶν ὑπὸ τὸ Β ἐνδεχομένων.

"When, therefore, A may belong to all B and B to all C, there will be a perfect syllogism that A may belong to all C. This is evident from the definition. For this is what we defined *de omni* contingent predication to mean. Similarly if A may belong to no B and B to all C, it follows that A may belong to no C. For the premiss, 'A may not belong to whatever B may belong to,' has been defined to mean that nothing should be excluded which may come under B."

Similarly in the *Posterior Analytics* (73 a 28 sq.) Aristotle defines the *dictum de omni*, and as an illustration gives a syllogism (οἷον εἰ κατὰ παντός ἀνθρώπου ζῶν, εἰ ἀληθὲς τὸνδ' εἰπεῖν ἄνθρωπον, ἀληθὲς καὶ ζῶν . . .).

But it would be wrong to infer from all this that Aristotle assigns no importance to the principles of contradiction and excluded middle. Quite the contrary. He devotes the entire second part of the fourth (Γ), and a few chapters of the eleventh (Κ) book of the *Metaphysics* to show that we cannot get along without them, and they are the basis of all ἀποδείξεις and συλλογισμούς.

Thus, 996 *b*, 27 *sq.*, we read *περὶ τῶν ἀποδεικτικῶν ἀρχῶν . . . λέγω δ' ἀποδεικτικὰς τὰς κοινὰς δόξας, ἐξ ὧν ἅπαντες δεικνύουσιν, οἷον ὅτι πᾶν ἀναγκαῖον ἢ φάναι ἢ ἀποφάναι, καὶ ἀδύνατον ἅμα εἶναι καὶ μὴ εἶναι. . .*

1005 *b*, 6 *sq.* . . . τοῦ φιλοσόφου . . . *περὶ τῶν συλλογιστικῶν ἀρχῶν ἐστὶν ἐπισκέψασθαι . . . τὸ . . . αὐτὸ ἅμα ὑπάρχειν τε καὶ μὴ ὑπάρχειν ἀδύνατον τῷ αὐτῷ καὶ κατὰ τὸ αὐτό.*

1061 *b*, 36 *sq.* *οὐκ ἐνδέχεται τὸ αὐτὸ καθ' ἓνα καὶ τὸν αὐτὸν χρόνον εἶναι καὶ μὴ εἶναι . . . οὐ γὰρ ἐστὶν ἐκ πιστοτέρας ἀρχῆς αὐτοῦ τοῦτον ποιήσασθαι τὸν συλλογισμόν. . .*

Is this then inconsistent with his argument in the *Posterior Analytics*? I think we can easily reconcile them. In the *Posterior Analytics* he is dealing with the purely formal process of evolving the conclusion out of the premisses, or, more strictly speaking, out of the major premiss. In so far as we merely do this, the law of contradiction is not involved. In the *Metaphysics* he is dealing with the significant content of the judgment and the syllogism. If these are to be significant to us in our present mode of thinking, the laws in question must be present at every step.

ISAAC HUSIK.

APPEARANCES AND REALITY.—I.

THE distinction between 'reality' and appearance, between what a thing really is and what it appears to be, is fundamental to our ordinary consciousness. Hence it is natural to make use of the distinction in metaphysics, and the result is a tendency to maintain one of two theories.

According to the first theory, we know things only as they appear to us, and not as they are in themselves. In particular things are not really spatial or temporal, but only appear so to us; space and time are only the appearances of a non-spatial reality.

According to the second theory, we know only 'phenomena' or 'appearances,' certain elements within our own minds; reality proper is beyond the mind and is not known at all. This view sometimes, as in Kant, tries to treat the appearances as being objects in space and time. We know them but not the thing in itself.

These positions may be said to differ in degree of scepticism. The former allows that reality is presented to us in perception, but insists that its nature becomes distorted in the process. The latter denies that reality is presented to us at all and substitutes for it another object, *viz.*, 'appearances'. Further these positions are not always distinguished. Kant, for instance, states his view sometimes in the form 'we only know things as they appear to us,' sometimes in the form 'we only know phenomena,' and he fails to notice that the two statements are different. The truth is that the first theory is a half-way house to the second. We are forced to go from the first to the second to gain some object of which it can be said that we know in the proper sense not only *that* it is but *what* it is. But for all that the second theory is the more sceptical, because it leaves the real object wholly unknown and regards knowledge as about something else.

In both cases the result is reached by the use of the common distinction between reality and appearance. The distinction relates primarily to objects of vision, and therefore the justification of its use in the theory of knowledge requires analysis of its nature in its original application. Only such an analysis will reveal the true nature of the distinction, and consequently the legitimacy of the theory of knowledge built upon it.

It will here be contended—

(1) That it is a certain analysis of the distinction which leads to the first theory and thence to the second.

(2) That this is a mis-analysis and that the distinction really understood leads to the contrary conclusion.

We can easily trace the origin of the view that we only know things as they appear to us, by taking any case where we distinguish between 'appearance' and 'reality'. Take, for example, Plato's instance of a straight stick partly submerged in water, which, as we say, looks bent, though in reality it is straight. If some one knows nothing about refraction and confines himself to a single perception, he will assert that the stick is bent; and if he is asked why, he will answer, 'because I see it to be so'. But if afterwards he sees the stick under other conditions and has learned about refraction, he will say that the stick only looks bent and is really straight. Thus having just identified what the stick is and what it looks, he afterwards draws a distinction between them.

And this distinction presents an obvious difficulty to knowledge in general. If a thing is not necessarily what it looks, how are we to learn what it really is? A thing in the sense in question is an individual; to get at it therefore we must perceive it. But the perception, to be of value, must give us the thing as it is. And that it does so is implied by the original assertion 'the stick is bent, because it is seen to be so'. Seeing is believing. The subsequent assertion, however, denies this, 'the stick only looks bent, but it is not what it looks'. Perception, that is to say, does not give us the thing as it really is. The conclusion at once seems to follow that we only know things as they look or appear to us and not as they are. And from this it is but a short step to the second view that we only know 'appearances' or 'phenomena'.

To put the difficulty shortly. Access to things implies perception. Yet if perception only gives us things as they look and not as they are, access to things as they are is impossible. But perception does in fact only give us things as they look, for this is presupposed by the distinction we actually draw between what they look and what they are.

This conclusion can only be avoided by maintaining that the reality of the distinction is still compatible with the position that perception at least gives us things as they are in some qualified way; that after all there is *some* identity between what things look and what they are. And a closer analysis of the distinction vindicates this identity.

That the analysis may be as concrete as possible, it will be well to bear in mind three prominent types of case.

(1) That of refraction already mentioned.

(2) That due to the nature of perspective.

E.g. (1) Railway lines may be said though really parallel to look convergent.

(2) A horizontal building may be said to look as though it were lower in its more distant parts.

(3) That due to distance from the observer.

E.g., the moon may be said to look as large as the sun.

These types suggest that the distinction between appearance and

reality at least primarily relates to the spatial qualities of things. The only exception seems to be the case of temporal relations; we certainly say that a certain event appeared to take a long time, though it really did not.¹ Again these cases bring before us by way of contrast the existence of spheres of perception where the distinction is wholly inapplicable, *e.g.*, those of pain and sensation generally. A pain is necessarily what I feel it to be; distinction between what it is, and what I feel or perceive it as, is meaningless. Similarly a noise, in the sense of a sensation as distinct from its physical conditions, is what I hear it as. In fact it is just the absence of the distinction here that gives much of its plausibility to the view that we only know phenomena. If we once allow that our objects are states of ourselves, we seem unable to deny that at least we apprehend *them* as they are, *i.e.*, that we really *know* phenomena.

We may now proceed to the analysis. The general form of statement to be analysed is, 'a thing looks or appears so and so, though we know that it is not so in reality'. The following seem the main points:—

(1) Such a statement is in no sense about 'appearances'.

For (a) its subject is not the appearance or look of the thing but the thing. When I assert that the moon looks as large as the sun, I make an assertion about the moon and not about its look.

(β) Its predicate is always 'real,' *i.e.*, it is always of a kind appropriate to real things, as opposed to their look or appearance. Thus the stick looks *bent*; the moon looks *as large as the sun*; the railway lines look *convergent*. If we seek for a predicate suitable to 'appearances,' we naturally think of such terms as 'deceptive' and 'untrustworthy'.

Our statements then about appearances are expressed in the same terms as the reality from which we distinguish them. It at once follows—

(a) That statements about appearance imply that we at least know enough about reality to say that real things have certain *possible* predicates, *e.g.*, bent or convergent. To deny this is to be wholly unable to state how things look.

(b) That the issue involved in distinguishing appearance from reality concerns not the general character of the attributes of real things but their relation to a particular subject. The question is not, 'Is convergence or bentness the attribute of *any* real thing?' but, 'Is it an attribute of particular real things, this stick or these lines?'

It follows that the distinction between reality and appearance relates solely to the details of our knowledge and not to its general or structural character. The attributes of reality cannot belong to γὰρ different from those of appearance. Doubt about its details implies certainty as to its general character.

¹ 'Appearing' and 'looking' are treated as distinct in meaning from 'seeming'; they stand for φαίνεσθαι as opposed to δοκεῖν.

(2) Whenever we say that a thing only looks so and so, we are really questioning some immediate judgment of perception. But this presupposes that, at least in certain cases, such judgments are not to be questioned but give us things as they are. Thus the assertion that the moon looks as large as the sun implies that there is something in perception which suggests that the moon is as large; and this is only possible if, under certain circumstances, perception gives the real relative size. And under certain conditions, it does so. If objects are equally distant from the observer, perception successfully gives their relative size. If we thought that there were no circumstances under which we should perceive the real relative size, we could never assert that one object *looks* as large as another. Similarly the statement that the stick looks bent implies that, given certain physical conditions, we should see the true shape of objects. Even in the case of perspective the same thing is true. If we really mean that the roof of a building looks converging towards the ground, we must allow that in the right position we should see it as it really is, *viz.*, horizontal. It may be objected that the necessity of foreshortening renders this impossible. But the answer is that if we admit the impossibility, we at once reconsider our original assertion and maintain that after all the roof does not look sloping.

(3) Our possession of the distinction between appearance and reality and our power of determining in particular what is appearance and what is reality presuppose that we understand how our apprehension of objects is conditioned by relation to us as observers. It is only because we know that our distance from an object affects its apparent size, that we can draw a distinction between the size it looks and the size it is. If we forget this, we can draw no distinction at all. The same knowledge is presupposed by that power to discount difference of distance which enables us to determine the real relative size of two objects. It is the same in the case of refraction. To be able to say that a stick looks bent, we must be aware that our perception is somehow physically conditioned, and we can only determine its real shape if we know the special nature of the physical conditions. Similarly it is because we understand the conditions of perspective that we can discount them and assert—if we do assert—that objects look different in shape from what they are in reality. Lastly it is precisely because there are no such spatial relations between observer and observed in the case of pain, that, with respect to it, no distinction between reality and appearance can be drawn.

It follows that the distinction, as used in our ordinary experience, arises from the special nature of the spatial relation between the object and the observer. Hence its application to knowledge in general and in a different connexion should arouse suspicion.

To apply these results. The essential feature of the first theory referred to, is that things suffer distortion in being presented to us. Two kinds of attributes are presupposed, those belonging to things

as they are in themselves, and those belonging to them as presented to us. And we know only the latter.

The falsity of the theory should now be obvious.

(1) Even if we allow the distinction between the attributes of things as they are in themselves and their attributes for us, we are obliged to allow that we know the general nature of the former. Accordingly we must know not only the detailed nature of the attributes for us but also the general nature of the real attributes.

(2) The distinction just referred to is wholly false. There is no such thing as an attribute of a thing as presented to us. All attributes used in stating how things look are primarily applicable to things as they are. The theory takes a distinction of detail and converts it into one of general structure. And the preceding analysis, if successful, shows that the distinction between reality and appearance presupposes that we at least know the *general* nature of reality.

(3) It has been pointed out that to distinguish between reality and appearance, we must be aware of and understand a special spatial relation in which we stand to objects as observers. Such a presupposition is excluded where the problem is the purely general one of the relation of reality in general to us as percipients.

It should now be possible to formulate more clearly what constitutes (1) the plausibility of the theory in question, and (2) the wrong step in the argument leading to it.

The plausibility is due to the real fact that in making use of perception to judge of the nature of an object, we have to take into account the special relation of the object to the perceiving subject, and that consequently we must discount what we should judge it to be, if we relied on the verdict of immediate perception. This suggests that in *knowing generally*, we must discount an element which belongs to objects only in appearance through their relation to a perceiving subject, *i.e.*, that relation to a percipient affects for the percipient the general nature of reality as well as its details.

The mistake in argument arises from a mis-statement of the real fact. 'The moon looks as large as the sun' is taken to mean 'while I do not believe it is as large, I perceive it to be as large, *i.e.*, for my perception it is as large'. The distinction between what a thing looks and what it is has to be stated, and it is stated by saying that *for perception* it is one thing, while *in itself* it is another. Then perception being the only means of access to the thing, it follows that we only know the thing as it is for perception.

But (1) the statement that something is so 'for perception' is vicious in principle. An assertion claims to be the recognition of objective fact, *i.e.*, of what is. If the words 'for perception' are significant, they constitute a restriction; they must mean 'only for perception'. But the assertion that something is so only for perception is a contradiction in terms. For perception is perception of what is; it involves judgment and its formula is, 'we perceive something

to be so and so'. And it is just this objectivity of perception which is the main factor in the transition from the view that we know 'things only as they appear' to the view that we know only appearances. We hesitate to assert that objects are so and so for perception and therefore transform this statement into another, *viz.*, that the appearances of objects are so and so. By making the appearance into a new object, we gain a new and suitable subject of assertion because, as an appearance, it admits of no distinction between what it is and what it is for perception. The new statement, however, is obviously false. Not only is the assertion 'the look of the moon is not as large as the look of the sun' not the equivalent of 'the moon looks as large as the sun' but it is not sense. There is the same absence of meaning in the statement in which Kant's view that space is a phenomenon ought to find expression, *viz.*, 'the look of things-in-themselves is spatial'.

(2) The statement 'the moon looks as large as the sun' is only in appearance an assertion about present perception. It is not true that I now perceive the moon to be as large as the sun. It is not so for my perception. For, as has already been urged, perception implies the belief that what I perceive is as I perceive it. The true meaning of the statement is, 'If I were to forget my position as an observer, I *should* assert that I perceived the moon to be as large'. The theory in question takes 'look' to mean 'is for perception,' which as opposed to what 'really is' involves a contradiction. 'Look' properly means 'would be perceived to be, if certain conditions were forgotten'.

The proper way to describe the process of taking into account the conditions under which we perceive, is to state it as a process of 'discounting' or 'correction'. We begin with an immediate judgment of perception, 'I perceive the moon to be as large as the sun'. Then reflexion on my position as an observer forces me to modify this judgment, and I assert, 'The sun is really larger, though if I were to forget the difference of distance, I should say that I saw it to be as large'. The point is that the immediate judgment of perception does not remain side by side with the judgment that corrects it. And only if it remained could I say, 'for my perception the moon is as large'.

The fact is that the hold of the phenomenalist view upon us arises from the almost inexpugnable conviction that the distinction between appearance and reality involves two distinct things, objects and their appearances. It is this conviction which lends colour to the view that when we have discovered that something is not really so and so, it still is so for perception. For it enables us to assert that the appearance remains, even when we have discovered that it is only an appearance.

Yet it seems impossible to avoid the conclusion that there are no such things as appearances at all. An appearance seems necessarily to mean one of two things, either (1) a perception, or (2) simply a sensuous image. In the former case a judgment is

involved, but a judgment which disappears upon reflexion on our positions as observers. In the latter case the desired result is not gained even if we disregard the activity of thought necessary to apprehend the image. For the image stands in no relation to the object, except possibly as its effect. And whatever it is, it is not *its* appearance or the appearance of anything. And if that be so, no distinction between reality and appearance remains. There are two kinds of reality, objects without the mind and images within it, and we know the one and we do not know the other. Lastly, examination of instances leads us to the same result. However much I see an object distorted through bad glass or in reflexions, it is the thing which I see. There is strictly speaking no 'look' or 'image' of the thing; there is only the thing with its characteristics distorted. The word 'look' or 'appearance' properly refers to a judgment, and that not a judgment I make now, but one which I should make under certain conditions.

H. A. PRICHARD.

VI.—CRITICAL NOTICES.

A System of Metaphysics. By GEORGE STUART FULLERTON, Professor of Philosophy in Columbia University, New York. London and New York: The Macmillan Company, 1904. Pp. x, 626.

THE qualities of Prof. Fullerton's book spring from two roots; from a great talent and a great distrust. He has all a metaphysician's subtlety and all a practical man's suspicion of metaphysical flights. The result is a volume in which the natural impression of the world, the picture that experience paints on the practical mind, is not rejected but re-analysed, and in which the philosophies that threaten it are attacked with sharp weapons in the rear.

Descartes had hardly laid down his principle of universal doubt and undertaken his scrupulous reconstruction before he is found dropping the words, in a parenthesis: "I will here, with your permission, freely use the terms of the schools". His contemporary Hobbes, on the other hand, propounded no doubts as to the reality of the world, but on the third page of the *Leviathan* was already rebuking "the schools" for "insignificant speech". The spirit of the traditional English philosophy, in its contrast with the continental thinking, thus spoke at the very outset. In Prof. Fullerton it finds perhaps its most resolute exponent. He is sceptical of words, not of things. "What does it *mean* to say that the infinite divisibility of time is matter of intuition?" In the accent of that question is heard the ground-tone of the book. Hence its seeming diffuseness, the expression of an indefatigable care for clearness and genuineness in construction. "There has been so much mystification," to quote the author's casual words about a passing topic, "that one cannot be too explicit." Hence, too, the avoidance of summary formulas couched in the treacherously facile terms of technical philosophy, the pure and simple style, the abundance of destructive criticism. The author's deliberate exposition at least keeps us in the presence of the concrete, or persistently leads us back to it as the touchstone for every formula. There is an old infection in philosophy, according to Prof. Fullerton, which is carried by language, and which in unconsidered ways still vitiates nearly all phases of philosophy; the tendency to materialise psychic things. His book might almost be described as

one long effort, in various regions, to track and expose this original sin of thought, and, in revealing the error, to reveal the truth. A metaphysical insight, like a gymnastic feat, has not only to be achieved but to be practised before it is made one's own, and usually old habits of "co-ordination" have to be unlearned before the new is acquired. The trained metaphysician in his impatience must not forget that there are others who need such a patient initiation; nor that it may even be suspected that, precisely because of his training, he needs it himself.

The metaphysical discussion begins with what the author calls "the psychological standpoint" with regard to the external world; the notion that a man in his private mind, confined to the circle of his own perceptions, knows through these a world of a different order beyond them. We have an analysis of representation. "We can only know through a representative those things which this representative can truly represent. . . . A representative can never stand for something else in so far as that other thing differs from it" (p. 52). Further, to know that our representative represents, nay, even to take it for a representative, is to be provoked by its presence to conceive something beyond it, and this we cannot be without prior experience, both of things represented and their representatives; a prior experience that can only have been immediate, since it makes mediate experience for the first time possible. "It requires a certain amount of information to be able to recognise that a given experience is a representative of something beyond itself." An "external" world of matter cannot therefore be represented by a consciousness that lacks the characters of materiality and is wholly "internal". Such a consciousness has neither reason nor power to infer such a world. "For such a mind it is inconceivable that the external world should exist at all." But if representative knowledge of an essentially non-mental world is impossible, the author also notices briefly a suggestion (coincident on one side with that which Mr. G. E. Moore has been ingeniously elaborating) "which grants the mind a direct knowledge of external things independently of the existence in it of such a representative image". And he puts his finger at once on the weak spot in the conception. "How, on such a basis, can the psychologist explain the possibility of being deceived about the natures of things? How explain an hallucination?" If the non-mental thing were "immediately present to the mind" "no mistake" as to its reality "would be possible".

In part ii, we find elaborated "a view," in the author's modest words, "of the external world which, I am glad to think, is not fundamentally new, even though it differs in some details from other doctrines with which the reader is familiar. Possibly some will be tempted to call it, at first glance, idealistic; but this name, with the associations that cling to it, can only lead to a misapprehension of its true nature." The long exposition is a masterpiece of dialectical construction, from which in our inadequate summary

the unwearyed appeal to the concrete, and much else, must be omitted. It takes the form of an inquiry into what is meant by "a real thing," and begins with the classic point of departure, "this table before me". "When I speak thus, I am not talking about a little copy of such a table in, or somehow connected with, my brain—a representative, which is unlike the real table, but in some inconceivable way stands for it. . . . The real external table is, then, a something in our experience. It is given in consciousness. When we have said this we have, to be sure, ruled out a possible source of error." But "if we simply maintain that the table of which we are speaking is, since it exists in consciousness, a state of consciousness or part of such a state, and rest content with that statement, we seem to obliterate completely the useful distinction between things and our ideas of things". The table is more than this one experience of colour-sensations which is all I have of it in sensation at the moment; it has a wealth of character besides. And the other elements of experience that appertain to its character, even some that are necessary to the very conception of "a table," have at the moment that I perceive it not the quality of sense but the quality of imagination. Psychologically viewed, the sensible table-characteristics and the imagined are thus different. Viewed as table-characteristics they are on the same footing. Moreover, when I withdraw beyond reach or sight of the table, not only some but all of its characteristics have the quality of imagination and not of sense; yet, despite the change in it as a mental phenomenon, as a table it remains unchanged. Evidently we have a trained disposition to ignore the psychic transformation; that is, when we are considering the things, and not our own situation. "So little does it appear to be necessary to mark this distinction when one is discussing real things, that most persons experience an emotion of surprise when it is pointed out to them that their consciousness of things is largely made up of imaginary elements. They are interested in *things*, not in their percepts as percepts." When percepts become imaginations we "pay no attention to the fact that they are in themselves to be differentiated from sensations. The qualities of things, as we call such elements of our experience as are conceived to have a place in" the physical system, "are not conceived as existing now in the sense and now in the imagination; they are simply regarded as forming a constituent part of that system". "It is their content, so to speak, which belongs to the construction, not the content with the added characteristic of belonging to the class called imaginary." Prof. Fullerton does not mean of course that we can extract the content from its imaginal embodiment, any more than we can extricate a picture from its oils; only that we base no action and no thought, in such moments, on the circumstance that the content appears in the guise of imagination and not of sense. This seems what is meant by saying that "we abstract from the degree of vividness with which [it] may happen to appear in consciousness".

Meanwhile the physical system has its integrity, and it is not every table of the imagination that can find admission to it—"I do not believe the table in the next room to exist merely because [*i.e.*, in that] the perception of it is in my mind". The imaginal table figures to the mind as a real part of the physical system on the understanding (which as regards our consciousness is in the first instance entirely tacit) that it could, under appropriate circumstances, be exchanged for sensation. When the mind does come to mark the difference between the imaginal and the sensory it recognises at once that "the table as seen . . . is actually in the setting in which things must be if they are to constitute elements in the external world"—in the physical system—and that the imaginal table is not in such a setting. The setting is the all-important fact. For what is the test by which sensation shall be distinguished? Sensation is not always more vivid than imagination. We have to turn to "the only ultimate criterion, a recognition of the way in which the experience *behaves*, of the place among our other experiences which it takes and maintains, and thus to decide upon the class to which it rightly belongs". "We must discover whether it takes its place among those elements of our experience which so connect themselves together as to form what we recognise as the system of material things." For there is an orderliness in this system lacking in our other experiences. Thus the test of membership in the class of sensations and the test of membership in the physical system prove to be in one stage of analysis the same; namely, their presenting themselves in a certain recognisable order independent of the will. Imaginal tables, etc., do not in their behaviour manifest this order. When one to whom an imaginal table has been, in point of content, on precisely the same footing of objectivity as the table of sense, is led in any case to remark the fact that it is merely imaginal—*i.e.*, probably in some sense fainter and certainly not in the order of involuntary experiences—he comes to take the imaginal edition as secondary. "He sees that the imaginary constituents of the world of real things which he finds in his experience do not take their place in that construction as *imaginary elements* but as representative of sensational elements." "They are important to us primarily on account of the function which they perform," that is, as guiding our wills in relation to the sensations for which they stand. They are representatives in effect—blind representatives. It was for this reason that in the economy of our natural thinking we were trained to "pay attention" only to their content, ignoring the imaginal quality; for of such content, in its determinate context, is the physical world composed. When we see the representative function of imagination and the possibility of misrepresentation, we have drawn the distinction between things and our ideas of them.

But if the physical world does not consist of our imaginations, neither does it consist of our sensations. Our actual sensations

are fragmentary and intermittent. The physical world is constant and complete. Just as we ignored the difference between imagination and sense, we build up our conception of the external world by ignoring the distinction between sensations that are, and sensations that under due conditions might be ; we abstract from the situation of the percipient ; we make a huge mosaic of our fragments ; we see in the total body of sensuous content a single systematic whole. In this construction in our consciousness the question of "setting" or context, the relation of one experience to another as its accompaniment or condition, is all-important. The actual sensations of any one occasion are of inferior importance. Just as in our imaginal ideas of things physical it is the content that matters and not the imaginal quality, so in our sensations it is still the content that is of the essence of "the physical world" and not the particular actual embodiment of that content. We must experience the world in particular sensations, or picture it in particular imaginations, but it is the sensuous pattern, the mutual arrangement of experience, the "ideal system," on which we base thought and act. As our imaginal ideas of phases of the external world turned out to be representative, so our sensations turn out to be representative. But there is a difference in the two cases. Our imaginations are supernumeraries, mere copies ; our sensations are representative as specimens of a manufactured fabric may represent a pattern that runs through all the lot. The sensations are a standard for reference, the imaginations not. Thus objects are immediately present in our consciousness, and yet the same objects may be immediately present in the consciousness of others. It is the kind that matters, not the psychological specimen. In a word, physical identity and psychological identity are not the same kind of identity. The identity of an object is fixed by its relations in the pattern. And we conceive of the world of objects as of a great standard content.

All this undertakes to be an analysis both of the external world as it actually is, and of "naïve realism," our instinctive conception of that world. "Naïve realism" is not blindly accepted, but at each stage the experiences are pointed out upon which its tenets are based. The discussion, as we have said, takes the form of an analysis of what is meant by the expression, "a real thing". Prof. Fullerton distinguishes in this connexion two senses of the word "real," namely (1) actual in conscious experience, and (2) belonging to the physical system. In the latter sense, "when we recognise anything as real, we are never confining our attention to the thing itself, but are always keeping in view its relation to other elements in our experience". It is in the second sense that we say that what we experience in hallucination is not "real". It is indeed actual in experience, but it does not belong to the physical system. In this second sense, which is that appropriate to our discourse about the physical world, it would be incorrect to say that an unperceived object is non-existent or a mere possibility, for

though it is such in relation to the stream of consciousness, it has its inalienable place in the physical system, in the standard content.

The fact that "order" is found in our experiences is what makes life possible; the more of it we find, the better in general for life. Hence we give the more regard to those elements of experience which lend themselves better to treatment as an order. When, within the general order of physical experiences, "we distinguish a nucleus which is peculiarly serviceable in definitely ordering and arranging the whole, certain of our sensations take the place of signs and others come to hold the more dignified position of thing signified". Here we have the distinction between appearance and reality. But the application to any given complex of sensations of the term "appearance" does not in the least do away with the reality to which it may lay claim in that it is a complex of sensations. If it did not belong to one system with the thing signified, it could not serve as a sign. The word "system" is here used in a more inclusive sense. When the scientific thinker concentrates attention upon the mass and energy of matter in motion and calls most of its apparent qualities merely "subjective," "he is separating from the mass of his sensational experiences a certain group which can be made to fall into a definite and measurable system, and which can serve as a means for relating and ordering sensations of every kind". Atoms, molecules and their laws are a working hypothetic completion of that apparent system in physical experiences which is what constitutes their objectivity. So far as the hypothesis *fits* our widening and elaborated experience, we are encouraged to think that a sufficiently complete experience would realise its terms. "We are dealing with a construct, and objects are called real when it seems reasonable to assign them a place in that construct."

Despite much affinity in this account to those of Berkeley, Mill and others, there are noteworthy differences. It is recognised that a thing, though wholly phenomenal, is not identical with the psychological fact called a percept and therefore does not cease to exist, or begin to be "potential," when the psychological fact ceases. Prof. Fullerton affords materials for a complete reply to objection here, though he does not put them in the form of such a reply. If, for instance, it were urged that, when we turn away, the table, having no basis of existence but experience, is not there any longer, the answer would be that if there is a "there," there is a table; the space in question having the same basis of existence as the thing in question. So much is obvious; but, if the objector, amending his language, now says, "At least it is true on your principles that, *when* the percept does not exist, the object (and its space as well) do not exist," the answer is, that if there is a "when," there is a table; the time in question having the same basis of existence as the object. Out of psychological space and psychological time are produced the "constructs" of

objective space and objective time as systems of relations between the experienced. Objective time is computed in terms of objective motion. "The real world in space and time," the world of daily thought or of natural science, being in its whole span a construction, a necessary expression of the aggregate relations or total form of experience, its parts have equal tenure of reality, and it is idle to adduce the peculiar nature of the existence of all to disprove the existence of any.

Prof. Fullerton asserts in effect that it is not true in any simple or ultimate sense that an experience of one consciousness takes place "at the same time" as an experience of another. It is true in a complex and analysable sense. It is true, in that the corresponding events in the physical world take place at the same objective time. In what sense then does a physical event "correspond" to a psychic? In a sense that gains its meaning wholly from experience, namely, that the one does not have its place in the physical system at all, unless the other makes its appearance in a consciousness: and *vice versa*. This is the force in saying that events in the brain are "directly correlated with consciousness". We give a man's feelings and ideas a date in the cosmic system by reference to his body. Without the system, the "construct," the world would fall apart into forms of consciousness as between which even simultaneity and subsequence would be unmeaning. "Without the objective order, without the real world in space and time, there would be no *world* at all, in any proper sense of the word, no universe of things and minds, no system, no experience."¹

The author differs then most vitally from Berkeley and Mill in refusing to take time as ultimate; a difference that one might provisionally and under protest at the word express by saying that he is an "idealist" as to time, and that they never were. (None the less one cannot resist the surmise that Mill would have accepted outright such a masterly advance on his own analysis.) This difference as well as the last quotation, suggest forcibly an affinity to Kant. We are reminded of the construction "according to rule," the "lawful context of experience," the conception that experience (that is, the experience of a world) is rendered possible only by the orderly construction. It is interesting that this affinity should exist without apparent debt, with antipathy to Kant as a thinker, and with rejection of the theory that such a construction involves *a priori* materials of thought.

His immediate difference with Kant in the theory of the external

¹ Setting out from the same premisses as Prof. Fullerton, Prof. Strong, in his important work *Why the Mind has a Body*, arrives at a widely different conclusion, namely an idealist panpsychism that finds the real seat of the operations of nature in a world of psychic "things-in-themselves". The divergence seems due to the different conception of time. Cf. Prof. Strong's brief and vigorous article "Consciousness and Time," *Psychological Review*, vol. iii., p. 149.

world relates to the composition of space and time. His own view is substantially identical with Berkeley's—that the "real" thing in the first sense of that word is never infinitely composite, and the "real" thing in the second sense, which may justly be regarded as infinitely divisible, is only an order of experiences—its divisibility only "a system of substitutions". Of all antinomies, including Mr. Bradley's, his view coincides with that pointedly expressed by Prof. Strong; that they arise, "not from a vice of reason, but from an error in reasoning".

The element of order, seen to be essential to objectivity, develops in the exposition into that of mechanism, and we are confronted with the relation between mind and body. Briefly, Prof. Fullerton is an automatist who regards the relation of mind and body as unique and hence neither capable of explanation nor requiring it. The relation is not causal, for cause has meaning only in the physical system. Cause is a term of time, and it is evident on his principles, that, as a state of consciousness has a date only through being inseparable from bodily facts which have a place in the system of moving matter, so a state of consciousness can be a cause only *through* bodily facts that are operative in that system. The author's thorough and trenchant criticism of theories of parallelism is conducted to show how many of them yield to the temptation to think of psychic facts in material picture; to show further that both the material and mental members of the relation are matter of experience.

Over the last part on "Other Minds and the Realm of Minds" we cannot linger. Prof. Fullerton's deferred approach to the subject is amongst the signs of his total rejection of the doctrine of Clifford and later writers that the essence of objectivity lies in the fact that fellow-beings may share our sensations. In the argument for fellow-minds his concern is to point out that the assumption of an independent material world is indispensable. He finds no evidence for panpsychism; and it is of course clear that, to one who denies that a purely mental fact can be a cause at all, the conception of a realm of interacting sentiency as the true scene of the causal continuities of nature must be unmeaning. Here again appears the influence of a principle that, though not singled out for emphasis, might almost be called, when we grasp it, the key to the book; the principle that "real time" is a construction bound up with the physical order, and that without such a construction mental facts would have no place in a temporal system at all. In the chapter on "The Unity of Consciousness" the author sweeps the ground of mere's nests in his most vigorous manner. "It is . . . not surprising that acute minds should plague themselves with what they call 'the problem of the unity of consciousness'. Nevertheless, there is no such problem. . . . A problem, to which no solution can be given which does not consist in a mere restatement of the terms of the problem, is not a genuine problem." A wholly admirable chapter on Mechanism

and Teleology brings us to a discussion of free will; in which the author, always an analyst rather than a sceptic, completely sustains the popular consciousness of freedom, while offering a deterministic analysis of it. In the final chapters "Of God," the fine and formidable edge of his analytic instrument is applied to some species of current metaphysical theism. The author admits, however, a remote analogy "beyond the present borders of science" by which we may infer a divine mind from nature somewhat as we infer a man's mind from his body.

In partially summarising a work whose chief want is of summaries I have dwelt upon the central theory of the external world; at once the most difficult portion of the book and that upon which the rest depends. In doing so I have purposely made an omission. I have wished to show that this theory in no wise depends on a certain questionable principle or verbal practice of the author's. He refers, briefly but recurringly, to the totality of things, the entire world of our recognition, as "consciousness"—consciousness, as he explains, "in the broad sense". In the narrow sense, the term stands in antithetical dependence on the external world; "my consciousness, as my consciousness, simply disappears if the objective order be wholly abstracted from". But this is an antithesis within consciousness in the larger sense of the term. The mind of self, the minds of others, the contrasted objective order, are in this larger sense all equally consciousness-elements. "It is impossible to pass, in any intelligible sense of that word, beyond this realm." In short, he stands here with Fichte, though evidently without indebtedness and without acceptance of the Fichtean notion of an "activity" behind experience. He stands with such contemporary followers of Fichte as Prof. Windelband and Prof. Rickert. His distinction is essentially that between the pure ego and the empirical ego. And the objection is (Prof. Fullerton's own thought extended to a larger sphere) that there is no reason to apply terms of a subjective cast to that whole in which the subjective is only one member in an antithesis. First in thought, say our author and the Fichteans, we must recognise consciousness, for thought implies it; it is only secondarily and as a fact of experience that we recognise the individual consciousness as such. First in thought, let us rather say, we come upon the world, existence, and it is only secondarily, by a distinction within that world, that we conceive consciousness. We come upon the idea of consciousness and of the individual consciousness at the same instant; there is no difference between them. If there is no reason to say "my consciousness" or "his consciousness" there is never any to say consciousness at all. It is when I wake to the fact that the things of thought and sense are, as now realised, appearances in a group of appearances that we come to need the term; and in that instant I set the assembled apparitions to which I apply it over against a sphere of possible reality distinct from them;

they take their place as one field of consciousness; as a part of the world of my thought's reach; that world is always larger than they. It is one thing to discover within that world that we have no reason to attribute existence in the ultimate, irresoluble sense to anything but fields of consciousness; that the material order is but a legitimate construction of the mind; it is another to swallow the material order and all minds into the consciousness now knowing.

In such a criticism, carried so far, Prof. Fullerton will perhaps see perversity. Has he not examined the idea of representation and shown that it is impossible by putting together consciousness-elements to construct something truly representative of a world which is not a part of our experience? Does not then the whole world of our ken and fancy become synonymous with our experience? Has he not shown that we know even "external things" "immediately"? Let us retort with a question. In "consciousness in the broad sense," or what we should call the world, there appear many individual minds. These minds in varying measure know each other; have true beliefs about each other. That is, in varying measure they represent each other. But this, a knowledge we recognise in others, cannot be an immediate knowledge; two minds, as the author says, are mutually exclusive. It must be a representation in absence. And when I think of my own mind as one amongst the minds of the world I must think of its representation of other minds, and of past and future, in just this light. These are knowledges that I know; they are in one sense of the word objects; knowledges that appear as facts amongst other facts in the total that the author calls consciousness. Now is it not true that whenever in reflexion we have reached the point of calling the whole sweep of the appearing world consciousness, we have turned upon ourselves and made of our consciousness an object; a discriminated fact amongst possible other facts? The very thought that stamps the world as "consciousness" opens up a possible world beyond it. Such a thought puts this "consciousness" on just the same footing as any fellow-mind. If so, "consciousness" in the largest sense we can attach to it may be conceived as capable of representation in absence. If we insist upon surveying a more inclusive whole we must take "the world". Thus by the very conditions of thinking one is debarred from identifying the expanse of reality with one's field of consciousness.

Representative knowledge is then, on any system, an inexpugnable fact in the world. The question how to reconcile this conclusion with the author's arguments in the chapter on the Psychological Standpoint, which are in the main coercive and final, is too large to be answered here. It may be suggested that the answer will be found by accurately distinguishing the psychology, the metaphysics and the logic of knowledge. The laws of thought exclude any plausible argument for a doubt of the world beyond one's consciousness. But metaphysics knows nothing of

thought's "self-transcendence"; psychology knows nothing of representative intent; and the category of "reference" in logic is none the less primary there because metaphysics and psychology can analyse it into resemblance and function.

It must be said, however, that Prof. Fullerton's conceptions are not sufficiently expressed in this direction to show how far his divergence from the view just expressed lies in verbal habit and how far in thought.

In stating his theory of the physical world we have made another omission. We have not noted (and we do so with diffidence) the almost intangible signs that two tendencies are at work. The first of these is that to which we have given rein in the exposition: to regard the second sense of the word "real" as ultimately analysable in terms of the first, to regard objects as ultimately analysable in terms of experience. The second tendency is to regard the second sense as equally simple and ultimate with the other. The second tendency seems bred of an increasing impulse to nestle yet closer, if possible, to common sense; to push as far away as possible from the eccentricities of "idealism". However, if the second tendency had its way, surely the term "construction" as applied to the physical world would have to be given up, and the chapter which explains infinite divisibility as "a system of substitutions" would have to be rewritten. As it is, the disturbing presence of both suggestions is not out of accord with the pregnant genuineness of the book, and marks the hesitancy of refined thought before the final phase of the problem. We must look to its author to dispel a misunderstanding, or to organise further the elements of his theory.

In the intellectual temper of the work we find no fault. In one respect the whole sets a good example which should be noted as we turn from it, namely, in the searching critical fire kept up at loose thinking on all sides. In the present state of plethora and confusion few conceptions can be driven home unless one shows what they are not. Aimed chiefly as it is to cure one great taint in speculative habit, the book would have missed a chance of service if it had less persistently laid bare the workings of fallacy. Destructive criticism is censured for its sterility, but we hold with old authority that there is a pruning that makes the sound grow strong. No one can say that modern philosophers are not productive, but who is hardy enough to maintain that they have produced the tests and tested principles on which a science rests; or that they have produced them as nearly as by discipline they might? In reading this author's "negative criticism" we could wish that the higher walks of thought were always so well policed. His wit and true strokes of satire are not here misplaced.

DICKINSON S. MILLER.

Grundzüge der Physiologischen Psychologie. Von WILHELM WUNDT. Fünfte völlig umgearbeitete Auflage. Leipzig: Engelmann, 1903. Translation of Part I. of the same by E. B. TITCHENER. Sonnenschein, 1904.

THE fifth edition of Prof. Wundt's great work fills more than two thousand pages and treats of so large a mass of controversial matter that the call to review it has produced a temporary mental paralysis, and this, my excuse for the tardy appearance of this notice, is offered together with humble apologies to the readers of *MIND*. It is not necessary to dwell on the merits of the work or to point out again that it marks an epoch in the history of psychology, and, since it is impossible to deal with all its many aspects, I propose to select one only for criticism, to inquire how far Wundt's handling of the physiological data, so rapidly added to since the appearance of the first edition, is satisfactory, how far he succeeds, by bringing them into a natural and helpful relation to the psychological data, in laying the foundation of physiological psychology, in short to examine his treatment of the principal psycho-physical problems.

The greater part of the first volume is devoted to an exposition of the structure and functions of the nervous system. The doctrine set forth represents a well-defined stage in the development of neurological science. It has long been known that the central nervous system seems to be wholly made up of fibres and nucleated cells. The fibres seem to be of the same nature as those which constitute the peripheral nerves. In the latter they seem to play the part of excitable conductors of the nervous impulse only, and the most refined methods of research have revealed no important differences of structure or function among them. Therefore, when the doctrine of the punctual seat of the soul was found to be untenable and a more materialistic view of the nature of mental processes began to predominate, it became usual to regard the nerve-cells of the central nervous system as the seats of processes very much more complex than those of the fibres, and to speak of a single cell as the seat of a percept or idea, or of the processes which are the physical correlates of such a complex state of consciousness. This view is still maintained by some authorities, but by most it has been given up in favour of the conduction-hypothesis, the view that the central nervous system consists essentially of a vast system of conduction-paths whose function is to distribute in an orderly fashion to the nerves leading to the executive organs the impulses initiated in its various parts, either spontaneously or by the arrival of impulses along the sensory nerves. This orderly distribution or co-ordination of efferent impulses seemed to be the expression of the existence of paths of very various degrees of openness or resistance through the vast network which the fibres of the central nervous system were supposed to constitute. Later it became clear that the co-ordination of impulses effected by the

greater or less degrees of resistance of conduction-paths is modified not only by augmentation, but also by inhibition, of impulses within the central nervous system. And careful studies of the simplest processes of central conduction, namely, those of the reflex-arcs of the spinal cord, then revealed other important differences between them and the simple conduction-process of peripheral nerve-fibres. It was found that in traversing such a simple reflex-path the nervous impulse always meets with a resistance such as it does not encounter in the peripheral nerves; that this resistance is only to be overcome by an impulse of a certain strength or by the summation of a series of feebler impulses; that it causes a delay in the passage of the impulse; that it is much greater for impulses passing up from the motor nerves than for those arriving by the sensory nerves, so that an impulse can as a rule pass only in the forward or efferent direction; that this resistance is variable by a number of influences; that transmission through the central path gives the impulse a rhythmical character, and that the process of central conduction, unlike peripheral conduction, is liable to fatigue. Since none of these peculiar features are found in the conduction-processes of peripheral nerve-fibres, and since fibres and cells were supposed to make up the whole nervous system, it was natural to attribute them to the influence of the cells lying upon the course of the fibres of the network. The taking of this step produced what may be called the nucleated-network view of the central nervous system. About twenty years ago, while this view predominated, great improvements of methods enabled histologists to show that nerve-fibres and what had up till that time been called nerve-cells are alike only parts of cells, that every complete nerve-cell or neurone consists of both a nucleated body and one or more thread-like prolongations of the protoplasm of the body, and that every nerve-fibre is but such a part of a nerve cell. It was further shown that a fibre soon dies if separated from the cell-body. The nerve-cells therefore appeared as the structural and the vital or trophic units of the nervous system, and to the nerve-cell so conceived the term neurone is sometimes applied. Now many kinds of evidence, direct and indirect, converge to prove that all those peculiarities of central-conduction enumerated above are due, not to the influence of those parts of the neurones which contain the nuclei, but rather to the peculiar nature of the structural and functional connexions between the members of the chains of neurones that constitute the central conduction-paths. Such connexions have been happily named synapses by Sir M. Foster, and, though the details of their structure remain obscure, the importance of the part they play is now widely recognised by British physiologists (as was shown in the discussion on the nerve-cell at last year's meeting of the British Association). The neurone is thus, for those who accept this conclusion, no longer merely a histological fact, but has been raised by experimental observation to the rank of a physiological theory which, when combined with the con-

duction-hypothesis, gives us new and fruitful conceptions of the mechanism of the nervous system. According to this view the neurone is not merely a structural and trophic element, but is also the functional unit, and the study of the nervous processes becomes, not merely the study of the conduction of impulses through a vast network modified only by the presence of nucleated cell-bodies on the network, but rather the study of conduction in the neurone, of the reciprocal relations of the neurones and of the action of neurone on neurone across the synapse. This scheme of the nervous mechanism, strongly based as it is by inference from many experimental observations, is of the greatest value to the physiological psychologist, for it is much better suited to his needs than the older conception of the nucleated network. Yet Wundt substantially retains this older view and accepts the neurone, not as a physiological theory, but as a histological hypothesis merely (i., 42). Hence he is led to form a number of hypotheses as to the structure and function of the nucleated parts or cell-bodies which are not supported by any direct evidence and which afford less satisfactory explanations of the observed facts of central conduction than does the neurone-theory. An example may be given. Wundt attributes the variable degrees of resistance presented by conduction-paths to the substance of the nerve-fibres in general and to the nucleated parts in particular. But experiment has failed to prove any such resistance to the passage of an impulse in nerve-fibres or cell-bodies, and if, as Wundt teaches, the conduction of the impulse through the nerve-cell is essentially a process of explosive decomposition, it is difficult to see how it can offer resistance to the passage of the impulse any more than a train of gunpowder can offer resistance to the passage of the flash. To meet this difficulty Wundt invokes the aid of an hypothesis concerning the relation of anabolic and katabolic processes, which, though superior in some respects to Hering's well-known though little understood doctrine of metabolism, involves the same fundamental difficulties. The formation of habits and other effects of use and practice are regarded by Wundt as due to diminution of this resistance of the cell-substance, and are assimilated to the raised excitability exhibited by a nerve-fibre during a few seconds after stimulation. He thus identifies two effects which the neurone-theory would keep apart, namely on the one hand *facilitation* or *Bahnung*, that temporary and fleeting increase of the excitability of neurones which Exner first demonstrated in the central nervous system and to which he first applied the term *Bahnung*, and on the other hand the permanent lowering of the resistance of conduction-paths which the neurone-theory would attribute to some structural change in the synapses that connect the constituent neurones of the path, a change which renders the connexions more intimate and which is usefully distinguished from facilitation by the term *canalisation*. Here the neurone-theory has the further advantage over the network-theory that, the junctions between neurones being much more numerous

than the neurones themselves, they provide a correspondingly richer, more adequate structural basis for the explanation of that differentiation and specialisation of manifold conduction-paths which is the essential process in the formation of neural habit. For a neurone commonly forms a link in many separate paths of different function, and if canalisation consists in some change in the general substance of the neurone or in its nucleated part, the repeated use of any one of these paths must result in improvement of all of them, a result hardly compatible with that delicate specialisation of function which probably underlies all acquisition and education.

Wundt's views on these fundamental points inevitably determine his treatment of all the special psycho-physical problems, rendering it somewhat vague and incoherent, and this must seem the more regrettable to those who accept the neurone-theory because that theory harmonises so well the physiological data with the doctrine of psychical elements, which is the basis of Wundt's psychological expositions. Thus, these views must have tended to, if they do not actually necessitate, Wundt's rejection of the doctrine of specific energies of the sensory cortical elements (the modern form of the doctrine of the specific energies of sensory nerves), and his replacement of it by the doctrine of the original indifference of function of all nervous elements and the adaptation of their functions to the stimuli. That in the sensory cortex of the normal adult brain there are elements of specific functions or specialised and invariable modes of response to stimulation is indisputable; but Wundt would have us believe that the specific function of each such cortical element is due only to the fact that its substance is continuous with the nervous substance in one or other of the sense-organs, the setting of which renders it peculiarly liable to be affected by some one kind of physical stimulus, which stimulus, repeatedly inducing in the nervous substance some form of change unlike that induced by any other kind of stimulus, impresses upon that substance throughout its course from sense-organ to brain-cortex a tendency to exhibit this specific kind of process whenever stimulated in any way. Wundt lays great stress upon this doctrine, which obviously is incompatible with the neurone-theory as defined above, and speaks somewhat scornfully of the doctrine of innate specific energies as an improbable and superfluous fiction. Yet I venture to think that his doctrine is quite untenable, and that the objections he raises to the rival theory are ill-founded. He attaches great importance to the fact that a person who has never had the use of one of his senses, or has lost it in the first years of life, never enjoys imagery of that sense. But that an organ should fail or cease to function when deprived of its normal stimuli is a rule of general application in physiology; and we have more decisive evidence in the opposite sense in the fact that a person born blind may experience colour-sensations as soon as the physical defects of his eyes are removed by operation. Wundt relies, too, upon the evidence

of vicarious functioning of nervous structures afforded by instances of restoration of motor function after destruction of nervous tissue; but it has not been shown that after destruction of a sensory area of the cortex the corresponding sensations are ever regained, and nothing short of this will support Wundt's view. Equally ineffective is his argument from the impossibility of conceiving the mode of origin of innate specific functions of cortical elements. Wundt's own principle of adaptation, combined with that of the inheritance of acquired characters, which he explicitly accepts, would necessarily result in the establishment of innate specific functions in the whole of each sensory tract. He scoffs at the view (accepted by Prof. James) that the origin of specific sensory functions may be explained by the principle of natural selection of spontaneous variations, yet this principle may be applied to explain the origin of these functions with just as great, or as little, difficulty as in the case of any other bodily function. He gives us a hypothetical sketch of the evolution of the senses and sense-organs by differentiation of a primitive cutaneous sensibility, and we may accept this as probably in the main a true account of the stages of development; yet the acceptance of this historical description by no means compels us, as Wundt claims (i., 449), to accept his principle of the adaptation of sensory organs and functions to the stimuli, for it is equally compatible with the belief that the principal part in the evolution has been played by spontaneous variation and natural selection, especially now that the reality of discontinuous variation has been established. And there are serious objections to Wundt's principle of specialisation by use of originally indifferent functions. It is bound up with the assumption of protoplasmic continuity throughout the sensory tract and, therefore, with the rejection of the neurone-theory which, as was pointed out above, is so superior in many respects to the older network doctrine; it assumes that the impulses carried by sensory nerves are as varied as the elementary qualities of sensation, whereas we have no direct evidence of any differences in the characters of the impulses in either sensory or motor nerves, while the success of experiments in joining together nerves of different functions implies uniformity of nature. It would be easier to imagine a variety of impulses in sensory nerves corresponding to varieties of physical stimuli if we supposed the impulses to be purely physical changes, such as various forms of regular vibration; but if, with Wundt, we assume that the impulse consists in the propagation of an explosive decomposition, it is hardly conceivable that the character of this chemical change can be determined by the nature of the physical shock which initiates it, rather than by the molecular constitution of the substance in which the change propagates itself.

A further serious objection appears when we attempt to define more nearly the nervous process that is the immediate correlate of the psychical element or unit of sensation. Wundt writes, "Hence every conscious content, though it be as in these instances quite

simple, conceived of as in isolation from its connexions, is always, physiologically considered, a complex formation made up of various nerve-processes spread over a large number of elementary parts". And it follows from his principle of adaptation that the whole sensory tract from sense-organ to brain-cortex, if not also the efferent tract by which the sensory excitation discharges itself, must be held by Wundt to be included in this "complex formation" in every part of which the specific process, the immediate physical correlate of the sensation-element, repeats itself. According to this view, then, sensation should accompany the process even though it be confined to the initial part of the tract in the sense-organ, yet all the available evidence goes to show that the excitation must be propagated through certain definitely localised elements of the cerebral cortex in order that sensation shall be excited.

Of all the special psycho-physical problems the most important, after that of the nature of the physical correlate of sensation, is the inquiry into the physiological conditions of retention and the reproduction of sense-impressions or percepts as images or ideas. For Wundt the sensation differs from the memory-image only in intensity, the latter is merely a sensation of low intensity, the presentation, whether percept or idea, is a synthesis of such sensation-elements, and the percept differs from the idea of the same object only in that some of its elements are more intense. The substrate of the physical correlate of the presentation is therefore identical with that of its reproduction as idea and it consists of a conjunction of those "complex formations" in which the physical correlates of the sensation-elements run their courses. In the case of the percept this complex "functional disposition" is peripherally excited, in the case of the reproduction it is centrally excited. This conception of the excitement of a complex functional disposition underlying the rise to consciousness of both the presentation and its reproduction is certainly very superior to that of "memory-cells" in which ideas may be deposited for future use, a conception which Wundt rightly rejects as impossible and misleading. The gaining of an insight into the mode of formation of such functional dispositions, made up of structures in widely separated parts of the brain, is one of the primary tasks of physiological psychology, but Wundt gives us very little leading here. We are told only that it must be an effect of physiological practice, and must be due to that property of nervous substance in virtue of which every excitation of it must leave behind a disposition to the recurrence of a similar excitation. What I have elsewhere called the crucial problem of physiological psychology, namely, the problem of the first formation of new association-paths in the nervous system, is thus ignored, and the conception of the functional disposition is left so vague as to be of little value save as a corrective of cruder conceptions.

Of other special psycho-physical conceptions the most important is that of the "apperception-centre" in the frontal lobe. This has

often been criticised, and I wish to make one point only. In discussing the feelings Wundt points out that they are "unitary functions," and continues, "This unity of consciousness is brought about by its specific unity-function (Einheits-function) which successively brings to especial clearness individual contents of consciousness by inhibiting all the others, and which we therefore call the central function of consciousness or, in distinction from the perceived contents of consciousness, apperception" (ii., p. 357). The feeling is the reaction of the apperception or unity-function of consciousness on the content of consciousness, and, since the feeling-tone of consciousness is at any moment a unitary state, "we are justified in postulating a unitary substratum for the physical phenomena accompanying and corresponding to the feelings" (ii., p. 360). According to Wundt, then, consciousness has not only a manifold content but also a specific function, that of unifying itself by inhibiting the superfluous sensory contents, and the exercise of this function gives rise to the state of feeling, the affective element of consciousness; and this unifying process of apperception has its physical correlate producing parallel effects in the nervous system, an inhibiting function residing in the prefrontal lobes and called into activity by stimuli from the sensory centres. Many serious objections may be made to this doctrine both on its psychological and its physiological side, especially the fact that clearness of apprehension and intensity of feeling are apt to vary inversely rather than directly, as demanded by the doctrine. Here I only wish to point out that this complex and unnatural speculation is rendered unnecessary by the acceptance of principles laid down by Wundt himself in the final or sixth section of the book, which, a new feature of this edition, consists of discussions of general principles. Wundt here lays down certain "principles of psychical causality" which govern the combinations and relations of psychical elements and insists very rightly, as it seems to me, that these relations and combinations are not to be regarded as being the parallels of any relations or combinations among the corresponding nervous processes. The first and most important of these principles is that of "*schöpferische Resultanten*," which may be adequately translated as psychical syntheses. According to this principle every psychical complex is a synthesis of the elements which analysis discovers in it, and is more than and quite other than the mere sum of the elements, e.g., "every spatial presentation is a product, in which certain elements have lost their independence in imparting to it a wholly new property, the spatial relations of the sensations". But if these syntheses of psychical elements are purely psychical processes or effects, what need have we to postulate a nervous organ in the prefrontal lobes or elsewhere to bring about such unification of the contents of consciousness and to serve as the unitary substrate of the nervous correlate of feeling? And it is not only the nervous organ of apperception that is superfluous but the psychical organ also, the "specific unity-function of conscious-

ness or the apperception". For, though an analysis of consciousness into elements is justifiable and necessary, it is only when we mistake these artificial products of abstraction for entities coming independently into existence, that we feel the need of an organ or a function which shall bring them together again, which shall unify in reality the elements that we have separated in thought only.

This strange conception of consciousness as something that exists beside its contents and exercises its specific unifying function upon them is bound up with Wundt's unsatisfactory attitude towards the problem of the relations of the psychical to the physical. There are five positions that a psychologist may consistently maintain : (1) He may confine himself to the task of describing mental process, putting aside the desire for causal explanation in both physical and mental science as a natural weakness of the mind to be sternly suppressed ; (2) he may base his psychology on psychophysical materialism and attempt, like Münsterberg, to redeem his position from absurdity by the recognition of a world of values and purposes unrelated to that of physical causation ; (3) he may adopt thoroughgoing parallelism, the doctrine of the universal double aspect of Fechner and Paulsen ; (4) he may, with Lotze, regard our mental life as the product of the interaction of soul and body ; (5) he may prefer the scientific attitude, and, admitting the impossibility of settling the question by general considerations, he may content himself with regarding the third and fourth of these views as working hypotheses to be tested in the light of increasing empirically-based knowledge. Wundt adopts no one of these five positions. The first, which is in harmony with his phenomenalist non-committal attitude towards things in general, he rejects at the outset in asserting that psychology attempts "to arrive at a causal analysis of mental process" and by the dictum that the causal principle is applicable without reserve to every kind of real change. The second he condemns as giving rise to a materialistic pseudoscience, and as the gravest danger that besets the path of our science to-day. The third is incompatible with his principles of purely psychical causation, especially that of psychical synthesis (*schöpferische Resultanten*), according to which the psychical elements alone have physical correlates while their combinations have no such correlates, and it necessitates the assumption of vast realms of unconscious psychical life and the acceptance of some theory of psychical dispositions or subconscious persistence of presentations to account for the facts of retention, conceptions with which Wundt will have nothing to do, rightly asserting that "there are numerous natural processes of which we have not the slightest ground for asserting that they, as is said, 'have a psychical side'". The fourth he rejects because the conception of a substantial soul seems to him antiquated and superseded by that of the *actual soul*, the conception of the soul as consisting merely of the train of psychical events. The last is incompatible with his philosophic habit of mind which will not allow him to pursue his science without at

the same time solving all the world-riddles and finding for psychology a niche in the logical construction which he offers us as a substitute for reality.

What, then, is Wundt's position? I confess that in spite of prolonged and painful efforts I cannot understand it. He accepts psycho-physical parallelism as a heuristic principle, but the parallelism only holds between the psychical elements (the conceptual products of abstraction) and processes in the nervous system, while to the concrete states of consciousness, resulting from the combinations of these elements according to the laws of psychical causality, no physical processes are parallel. The parallelism of the psychical elements and their physical correlates remains a bald unintelligible fact, and, although the elements are supposed to have causal relations with one another, no causal explanation of their appearance in consciousness can be given. Again, "Body and soul are a unity, but they are not identical; they are not the same, but they are inseparable properties of living beings" and "this unity is not an assumption but an experience which we can never put aside" (iii., 764), and again this unity is an indispensable presupposition for science. Wundt's position seems to combine most of the drawbacks of those other positions indicated above and to lack their consistency and intelligibility. Fearing to commit himself to any inference as to realities behind the veil of appearances and condemning every such inference as metaphysical, he yet seeks causal explanations of appearances, forgetting that the conception of a cause is at least as "metaphysical" as that of a substance and, like it, an inference from the facts of immediate experience which has rendered immense services in the past and without which science has not yet learned to do its work.

All this vagueness, not to say incoherence, of Wundt's treatment of this question is but another melancholy instance of the evils that psychology has so long suffered from its all too intimate connexion with philosophy. Like so many others, Wundt strives to construct his psychology so as to avoid the dualism which alone enables us to give a causal explanation of mental process without committing ourselves to the extravagant assumptions of thorough-going parallelism or to the absurdities of materialism; and this because, in the words of Prof. Meumann, "every dualistic metaphysic would leave over a number of open questions and does not satisfy man's desire for unity in his efforts after explanations". As well might the great natural philosophers of the last century have refused to entertain the atomic theory on the ground that a pluralistic metaphysic might seem to leave open a number of questions. If we seek in these pages an answer to the essential question—Is the causal physical series of events, that issues in a bodily action, a closed series that contains the complete determination of the action, or does the accompanying psychical series in any way co-operate in that determination?—we find no answer. The question is not faced but avoided by sinking the discussion to an unreal and purely verbal plane.

The final section contains a discussion of the bases of the natural sciences, as well as that of psychological principles, and this is of great interest as a statement of the matured views of this veteran thinker. But this too is infected with that artificiality which arises from a too subjectivistic tendency, which instead of facing and attempting to solve the great problems, reduces them to a purely verbal plane, so robbing them of all reality and interest. This is best illustrated by Wundt's proposed reconciliation of causality and teleology. All series of changes are both causally and teleologically determined because, the later term being given, we can argue to the earlier just as well as from the earlier to the later; both causation and teleological determination are but applications of the logical principle of ground and sequent. How simple! But how unsatisfying! Is it not better to admit that some problems remain insoluble still?

The translation by Prof. Titchener, of which the first part has now appeared, will be welcome to all English and American students, for Prof. Wundt's style is never easy for the foreigner. The translation is all that can be desired; the only complaint I have to make is that a number of unfamiliar technical terms appear, e.g., myel for spinal cord, cinerea for grey matter, oblongata for spinal bulb, sectioning for severing, and that '*psychische Lebensvorgänge*' is translated 'phenomena of mental life,' a loose and undesirable phrase, which, I think, is everywhere avoided by Prof. Wundt.

W. McDougall

Psychologie und Pathologie der Vorstellung. Von RICHARD WALLASCHEK. Leipzig: Verlag von Johann Ambrosius Barth, 1905. Pp. x, 323.

THE present volume by Dr. Richard Wallaschek is in some sense a continuation of the positions expounded in his *Primitive Music*, recently re-issued and expanded in a German edition. In that book he presented an elaborate inductive argument, based on a multitude of facts, to show that music arises out of rhythm and the time-sense. Incidentally, he offered some suggestions towards a proof that music is an essential condition of the highest mental life. In the present volume he works up to this conclusion in an entirely different way. Prof. Sully, in reviewing the previous book (*MIND*, N.S., iii., p. 134), suggested that Dr. Wallaschek might work out certain points in his theory somewhat more in detail. The book now before me is not precisely what seems to have been in Prof. Sully's mind at the moment, but again incidentally it does supply somewhat of the elements then found wanting, among others certain points in the relation of the "time-sense" origin of music to the melodic scale. But the present volume covers much more than this. It starts with a definite theory of æsthetics as the thesis and shows by an objective analysis of certain pathological conditions,

supported by much carefully handled psychological material, what the ground-work of æsthetic appreciation is. Dr. Wallaschek at no point leaves us in doubt as to his meaning. With him æsthetics is "the scientific study of men at the moment of artistic enjoyment or artistic production. It is not the doctrine of the nature of objects, but of their effects. As such, it has nothing to do with the problem of works of art as pure objects detached from the impression that they produce. It is neither a mere normative science of the object (Art-philosophy) nor yet mere physiology; it is an analysis of emotional excitement (*Begeisterung*) and uses as its material the knowledge of the condition of a man when he finds himself under the influence of those things that he enjoys for the sake of enjoyment" (Preface).

That this view is in some degree a "departure from the traditional view" may be granted. It is not here necessary to discuss the validity of the theory. It is enough that it forms a definite basis for the analysis of a definable mental state. This it certainly does. Let the broad proposition be accepted that there are artists, and art-products; it follows that one way of discovering what is the truth about them is to study the mental condition of the artist at the moment of production, if that be possible, and the mental condition of the spectator while he is enjoying the product. The two are correlative. That which in the spectator enables him to see a picture as beautiful is the same in kind as that which in the artist enables him to produce the picture. And they are both allied to that which enables all to "enjoy for enjoyment's sake". Hence, there is a wide basis for inductive analysis. Dr. Wallaschek says: "The old æsthetic spoke of the object and has remained subjective; we shall speak of the subject and hope thereby to attain to a standpoint that is objectively valid". How far he has succeeded in this only a detailed study of the book can show, but the exposition is all relevant to the purpose in view. The composition is clear and trenchant. The scholarship is extensive, but lucidly produced. There are fourteen pages of bibliography. Altogether the book seems to me an excellent piece of analysis—lucid, concrete, critical.

For the present the author confines himself to the analysis of "Vorstellung". He quite recognises that for a complete theoretical basis of æsthetics a parallel investigation must be made of sensation, feeling and judgment.

The nature of "Vorstellung," which for this purpose I may translate as representative idea or representation (including process and product), Dr. Wallaschek attacks from the standpoint of physiological psychology (including pathology).

Part I., which occupies one-third of the book, deals with Speech, Singing, Reading, Writing, Mimicry, Gesture, Action in their pathological relationships. The point of view is that accidents of disease frequently result in a genuine analysis of physiological and, therefore, of mental conditions. Thus in aphasia, in some of its forms, intellectual speech may be lost, yet emotional expression be

retained. This indicates a distinct cerebral embodiment, not to say area, for each class of "Vorstellung". This principle is applied all through. And "Aphasia" is expanded to include the disturbances of other activities. The definite varieties produced by disease are, as it were, a "Vivisektion des Physiologen" (p. 306), as hypnosis is "Vivisektion des Psychologen". I am inclined to think that Dr. Wallaschek, like the majority of those that use the same materials either for psychological or medical purposes, make somewhat too uncriticised a use of the grosser pathological states. It is no doubt true that the mental phenomena associated with aphasia, for instance, in a case of hemiplegia, are constant enough to permit of detailed analysis, and the broken brain, so far as it functions at all, may still yield something mental. But it is clear that the mental phenomena present are often not functionally on the same plane as the normal, any more than the irregular muscular contractions in a broken limb are on the same plane as normal walking. The danger is less where the so-called functional paralyses are in question. The investigation of these has been abundantly illustrated by Raymond and Pierre Janet. Of this class of analysis there is little or nothing in this book. Analysis by hypnosis is carefully estimated. Incidentally, in every section, practical hints for educational purposes are freely given. One point Dr. Wallaschek repeats in many connexions, namely, that the true direction in acquisition is from whole to part, not from abstract part to whole. The part takes its meaning from the whole, which is not the mere sum of its parts. Gower's patient, who, on being requested to say "No," declared at last—"I cannot say no," is cited to show that the whole sentence has one place in the brain, the individual word another. But this assumes that the word in question, when uttered in the particular sentence, was in content the same as it would have been if uttered alone,—which is doubtful. But, in the wide sense that words as symbols of meaning and words as mechanical sounds give rise to different varieties of disposition in the brain and so form organic parts of different varieties of whole, we may accept Dr. Wallaschek's contention of whole and part. As the sentence to the word, so is the word to the letters in it (p. 16). In practical education, no doubt, the perception of meaning assists acquisition, but it is equally true that mechanical acquisition of many words, formulae, etc., is not only possible, but essential to progress. The main point is that the thing to be acquired be the right thing. If it is lodged in the memory or in the habit, it will be of ultimate service whether the meaning is perceived at the time or not. That our rote-acquisitions at school are relatively so small is due largely to the fact that by the infinitely varied repetitions of daily life we acquired by rote much that we should otherwise have had specially to learn. Possibly, Dr. Wallaschek would accept this; but his repeated insistence on the necessity of always "understanding" what is learned seems to me too unqualified.

In Singing, as in Reading, Writing, Imitation and many other activities, parallel instances are dealt with and the same principles applied. Here emerges the question of the relation of music to word-text. Music is the expression of feeling, and the text is intellectual. But in the song the two must be combined for emotional purposes. It follows that the intellectual element is absorbed in the emotional. The words as intellectual cease to function except as the occasion for the emotional expression. This falls in with Dr. Wallaschek's well-known theory of the early development of song. In primitive song the intellectual content of the words may be little or nothing. The argument based on clinical cases is certainly strong, and he enforces it with much more detail and circumstance in the second part.

His practical deductions as to musical education are worthy of careful study, since they are obviously based in no merely theoretical knowledge of the art. The essence of the whole is that as the playing of music is a cerebral function expressed through the fingers and involves the relation of the brain to the finger, all practising should be not of purely mechanical effects, but of exercises with meaning, of true works of art. In other words, practice should not be of abstract note-scales. This is essential for beginners; less so for the experienced, who can give a purpose even to isolated notes. He even denies the value of massage for the fingers, because, to be effective, massage should be applied to the brain as well. Here he is on doubtful ground medically. But the results are matter of experiment. Certainly, the total musculo-nervous circle must be kept in view, but there is a periphery as well as a centre, and the relation of the two is so subtle that one hesitates to dogmatise on the reflex nutritional effects that might result to the central nerve-mechanism even from the massage of the fingers. At the same time, he is right to direct the attention to the total functional unit.

Part II. deals with "Das Innere Geistesleben, Wesen und Verlauf der Vorstellungen". The first chapter is a very thorough exposition of the leading types of Vorstellungen—visual, auditive, motor. Here again the chief illustrations are from music. All three types are to be found among musicians, but the motor type is the most fundamental. The criticism of programme music (p. 141 *et seq.*) is well grounded. The author's theory of the origin of music again helps him here, but the criticism does not depend on it. The point of his contention is as before—that at the time of hearing it, music to be enjoyed must not be thought about, and the programme expositions of motives and meanings make the cardinal mistake of not allowing for this. Whatever be the guiding value of the programme, the appreciation of any piece depends in the end on the subjective state of the listener. A programme "in his head" is of use to the executant, but it cannot as such be transferred to the mind of the listener, and the effort to do so tends to destroy the strictly musical effect both for player

and listener. Of course, there is Wagner with his theories, which seem to count against this view. But it is shown that Wagner the artist was not a strict follower of Wagner the theorist. In *Tannhäuser*, for instance, the intellectual framework is of the simplest; the words, such as they are, form but the occasion for the music, and yet the emotional effect of the music is of the most subtle and powerful.

In the next chapter,—“Assoziationen der Vorstellungen und Empfindungen,”—we are introduced to a careful study of “secondary sensations,”—coloured hearing, tactile hearing, olfactive hearing, and other varieties. Naturally, “audition colorée” is discussed with most detail. This section forms an excellent summary of what is known on this topic. The author, however, omits all reference to Parish’s *Hallucinations and Illusions* in discussing the relation of these to coloured hearing. There is, according to Dr. Wallaschek, no difference in the physiologico-anatomical basis of these three (p. 185). His explanation differs from those hitherto offered. Secondary sensations, he maintains, depend on the unequal dilatability of the blood-vessels of the brain (p. 187). This view is supported by much ingenious argument. In a person whose brain-vessels are unequally dilatable, a tone-sensation might not only excite its appropriate centre, but also, through the more easily expanded vessels, affect the colour-centre even more readily than this could be stimulated by its own specific end-organs. This theory accounts certainly for some of the difficulties, but the evidence adduced to show that this vaso-motor inequality is a *vera causa* is scarcely adequate. The theory looks like proving too much. It does not explain the specific limitation of the secondary sensations, for instance, to vision, or to any other one sense. There is a further ingenious suggestion that secondary sensations are the foundations of instincts (p. 191). The secondary sensation is an anticipatory function. Dr. Wallaschek regards these sensations as a condition of life. They are variations that natural selection can use. But, as has more than once been indicated elsewhere, these sensations are extreme types. The line between the least marked of them and ordinary associations is difficult to draw. Whether they are an incidental result of vascular inequalities, or in some degree the result of early, but partially obliterated, association, is a problem for further analysis by experiment and observation.

The remaining chapters deal with Memory, Natural and Artificial Diseases of Re-presentation, Sleep, natural and hypnotic. These chapters contain little that is essentially new, but the treatment is fresh and relevant. The author concludes on a high note,—art is essential to social and individual development; it is not a luxury, but a necessity of life.

W. LESLIE MACKENZIE.

Symbolic Logic and Its Applications. By HUGH MACCOLL,
B.A. Lond. London, 1906. Pp. xi, 141.

READERS of Mr. MacColl's papers in *MIND* and elsewhere will be already familiar with most of the contents of this volume, but they will be glad to have his system in a more connected and accessible form than hitherto. For reaching those who do not follow closely the development of symbolic logic, publication in book form is almost essential; and it is much to be hoped that this book will be widely read. From this point of view, it has the great merit of being by no means difficult, and of demanding absolutely no previous knowledge of the subject. It appears to be intended to be suitable for beginners, and in this it certainly succeeds.

The distinctive characteristic of Mr. MacColl's writing is that he deals always with whole statements or propositions, not, like most writers, with classes. "The complete statement or proposition," he says, "is the real *unit* of all reasoning" (p. 2). Hence he is primarily concerned with *implication*, not with *inclusion*; his formulæ state that one statement implies another, not (directly) that one class is contained in another. The relation of inclusion between classes is for him derivative, being in fact the relation of implication between the statement that a thing belongs to the one class, and the statement that it belongs to the other.¹ He was, I believe, the first to found symbolic logic on propositions and implication, and in this respect he seems to me to have made an important advance upon his predecessors. In the present work, he gives the elementary formulæ of his method, re-states some parts of traditional formal logic, deals very briefly with some controverted points, and explains his interesting "calculus of limits".² His discussion of the syllogism and the would-be canons (about not having two negative premises and so on) should serve to show philosophers how far formal logic has travelled from the pedantic trivialities of *Barbara Celarent*. There is an excellent analysis of induction (pp. 84-95), and some illuminating definitions of received terms are given. The habitual confusion (in more or less subtilised forms) between a hypothetical and an inference³ is shown to be a cause of wide-spread and important errors. Mr. MacColl rightly protests against the practice of stating syllogisms as if they contained inferences instead of mere hypotheticals. This might be thought to be a purely verbal question, but it is in fact, as he points out, a

¹ In *MIND*, N.S., No. 55, p. 400, I spoke of this as Peano's interpretation. It was, however, given by Mr. MacColl as early as 1878, and should therefore be ascribed to him.

² A good account of this will be found in vol. ii., part ii. (posthumously published) of Schröder's *Algebra der Logik* (Leipzig, 1905), pp. 515-563. (Schröder points out and rectifies a mathematical error in Mr. MacColl's method of changing the order in a multiple integral.)

³ In a hypothetical, it is merely asserted that *if* the hypothesis is true, the conclusion is true; in an inference, the hypothesis being known to be true, the conclusion is also asserted.

source of much confusion. "All men are trees, some men write books, therefore some trees write books" asserts two false propositions; but "If all men were trees, and some men wrote books, some trees would write books" asserts one true proposition. "Nearly all fallacies," Mr. MacColl says, "are due to the neglect of the little conjunction *if*. Mere hypotheses are accepted as if they were certainties" (p. 49). And, we may add, hypotheticals whose hypotheses are seen to be false are unduly disregarded, because they are considered as inferences, and as such would be erroneous.

Mr. MacColl differs from most symbolic logicians on certain points of considerable philosophical importance. These are all connected with each other; and his views seem to me to spring from the fact that he deals rather with verbal expressions than with what is meant by them. In this respect I cannot but think that two relevant and connected distinctions have been overlooked, namely (1) that between a verbal or symbolic expression and what it means, (2) that between a proposition and a propositional function. A good deal of Mr. MacColl's reasoning appears to me to fail if these two distinctions are borne in mind. He distinguishes five classes of statements: true, false, certain, impossible, and variable. (These are not mutually exclusive: what is true may be certain, what is false may be impossible, and what is variable may be true or may be false, though it cannot be certain or impossible.) A *certainty* is something which follows from the laws of logic or from the data of the question concerned; an *impossibility* is something of which the contradictory is a certainty. A *variable* is defined as follows (p. 19): "When I say 'A is sometimes true and sometimes false,' or 'A is *variable*,' I merely mean that the symbol, word, or collection of words, denoted by A, sometimes represents a truth and sometimes an untruth". As an instance he gives "Mrs. Brown is not at home". Here it is plain that what is variable primarily is the meaning of the form of words. What is expressed by the form of words at any given instant is not itself variable; but at another instant something else, itself equally invariable, is expressed by the same form of words. Similarly in other cases. The statement "He is a barrister" expresses a truth in some contexts and a falsehood in others. Thus the variability involved is primarily in the meaning of the form of words. Ordinary language employs, for the sake of convenience, many words whose meaning varies with the context or with the time when they are employed; thus statements using such words must be supplemented by further data added before they become unambiguous. It is such forms of words that constitute Mr. MacColl's "variables". But is not this importing into logic the defects of common speech? One of the objects to be aimed at in using symbols is that they should be free from the ambiguities of ordinary language. When we are told "Mrs. Brown is not at home," we know the time at which this is said, and therefore we know what

is meant. But in order to express explicitly the whole of what is meant, it is necessary to add the date, and then the statement is no longer "variable," but always true or always false. It results that a variable statement is merely one whose meaning is ambiguous. Now logic ought not to be concerned with forms of words, but with what such forms mean; hence it is essential that logic should employ only forms of words which are unambiguous, and when this is done "variable" statements disappear.

There is, however, a further distinction, namely that between propositions and propositional functions; and in regard to the latter, Mr. MacColl's distinction of *certain*, *impossible* and *variable* does seem to be applicable. We may say that " x is a barrister" or "Mrs. Brown is not at home at the time x " is true for some values of x and false for others. Either of these is a propositional function; but neither is a proposition. Each is merely a general form into which many propositions fit, namely all those resulting from giving values to x . Such a form may be called a *certainly* when it is "true for all values of x ," i.e., when, whatever value we give to x , the resulting *proposition* is true; it is *impossible* when it is "false for all values of x ," and *variable* when it is neither certain nor impossible. Thus we shall say that *true* and *false* are alone applicable to propositions, while *certain*, *variable* and *impossible* are applicable to ambiguous forms of words and to propositional functions.

Mr. MacColl's introduction of the "unmeaning" (p. 10), as a separate class of statement, again illustrates the fact that his system is often concerned only with the verbal expression, not with what is expressed. For what is unmeaning is merely a phrase; it is by no means nothing, on the contrary, it is a definite form of words. In logic, we ought to adopt such a language, and such rules for its employment, that unmeaning phrases shall not occur. This point is connected with Mr. MacColl's view as to the null-class. He says "The symbol 0 denotes non-existence, so that $0_1, 0_2, \dots$ denote a series of names or symbols which correspond to nothing in our universe of admitted realities" (p. 5). Here 0 is supposed to denote non-existence itself, whereas $0_1, 0_2, \dots$ denote *names*. Such a want of homogeneity cannot but breed confusion. Thus he says (p. 42) that 0 is the class of individuals which, in the given circumstances, do not have a real existence. But if $0_1, 0_2, \dots$ are to be members of the class 0, this cannot be the case. For $0_1, 0_2, \dots$ are *names*, and therefore do have a real existence; and since, *ex hypothesi*, they are not the names of anything, we cannot get a series of non-existent individuals which they name. It is a pity that Mr. MacColl has nowhere in his book discussed the meanings of the word *existence*. It is also a pity that he has not considered explicitly the relation of a name to the thing named. At present, his 0 seems to be the class of things named by names that do not name anything. This would be an unobjectionable definition of the null-class, if he did

not assume that the various names that do not name anything do nevertheless name a number of different unreal individuals. His view, that there are two classes of individuals, the real and the unreal, seems to assume that every name must name something; and this it assumes, I think, because his system oscillates between the name and the thing named. All individuals, I should say, are real; but some phrases analogous in form to names of individuals do not name any individual.¹

Mr. MacColl appears not to apprehend clearly the usual position about the null-class. He says (p. 77): "The null-class 0, which they [other symbolists] define as *containing no members*, and which I, for convenience of symbolic operations, define as consisting of the null or unreal members $0_1, 0_2, 0_3$, etc., is understood by them to be *contained in every class*, real or unreal; whereas I consider it to be *excluded from every real class*". The "whereas" here is quite misleading, since (as he points out in the next paragraph) the people in question also hold that the null-class is excluded from every real class. They say that *a* is included in *b* if *a* has no member which is not a member of *b*, and that *a* is excluded from *b* if *a* has no member which is a member of *b*; hence if *a* has no members, *a* is both included in *b* and excluded from *b*. Also the question is hardly to be decided by "convenience of symbolic operations," since one question at issue is whether there are such things at all as "null or unreal members". Again Mr. MacColl says (p. 78) that our view involves the absurdity that every individual impossibility is a member of the class of certainties. But we hold that there are no impossibilities, *i.e.*, no entities of which it is true that they are impossible. He himself holds that impossible propositions (*i.e.*, those whose *truth* is impossible) imply certain propositions, and points out (p. 13) that this does not mean that if a statement is impossible it is certain. There is a close connexion between the two cases, and the paradox is in both cases only apparent.

The distinction between propositions and propositional functions solves Mr. MacColl's controversy with Schröder as to the following implication: "If *p* and *q* jointly imply *r*, then either *p* implies *r* or *q* implies *r*". Mr. MacColl holds that this is false; and after giving a proof of its falsehood he sums up as follows: "The Boolean logicians . . . draw no distinction between the *true* (τ) and the *certain* (ϵ), nor between the *false* (ι) and the *impossible* (ι). Every proposition is with them either *certain* or *impossible*, the propositions which I call *variables* (θ) being treated as non-existent. The preceding illustration makes it clear that this is a serious and fundamental error" (p. 75). The case in which, according to Mr. MacColl, the above implication fails, is when the combination "*p* and not-*r*" and the combination "*q* and not-*r*" are variable, but the combination "*p* and *q* and not-*r*" is impossible.

¹ Cf. MIND, N.S., No. 56, p. 491.

The following illustration may make this clear. Let p be " x is English," q , " x is a man," and r " x is an Englishman". Then " p and not- r " is possible, since x may be an Englishwoman; " q and not- r " is possible, since x may be a foreign man; but " p and q and not- r " is impossible. Thus p and q jointly imply r ; but p does not always imply r , and q does not always imply r . The reply which I should make would be that here x remains undetermined, so that we are dealing with propositional functions, not propositions; and as regards propositional functions Mr. MacColl is in the right. But as soon as x is determined, the implication holds. For if x is not English, p is false, and " p implies r " is therefore true;¹ if x is not a man, " q implies r " is true; and if x is English and a man, r is true, and " p implies r " and " q implies r " are both true. The truth seems to be that there are two different things to be considered: (1) material implication, which holds between p and q whenever p is false or q is true; (2) formal implication, which states that, whatever x may be, material implication holds between ϕx and ψx . Of these the first alone is considered by Schröder, the second alone by Mr. MacColl; but Mr. MacColl obscures the fact that he is considering the second by employing a single letter instead of ϕx , so that he seems to have a proposition where he really has a propositional function. This certainly leads to brevity in notation, but it does so by not distinguishing between very different things. Thus he takes the statement " $A^{\theta\theta}$," and triumphantly points out how much briefer his formula is than any that other symbolists can provide (pp. 79-80). This is true. But it will be instructive to examine the matter. " $A^{\theta\theta}$ " means "the statement that A is sometimes true and sometimes false is sometimes true and sometimes false". If this statement is to have any meaning, it is necessary that A should be not a proposition, but a propositional function of two variables, say $\phi(x, y)$. Then A^{θ} may mean "For such and such a value of y , some values of x make $\phi(x, y)$ true and others make it false," or it may mean the above with x and y interchanged. Taking the first meaning, we may write $\phi(x, y)^{\theta_x}$ to express it. Then $A^{\theta\theta}$ becomes $\phi(x, y)^{\theta_x \theta_y}$. This expression is somewhat longer than Mr. MacColl's, but it is unambiguous and never destitute of meaning—two points which are of great importance and in which Mr. MacColl's notation fails. It should be added that, for the expression of all such formulæ, we require a symbol not to be found in any author except Frege (so far as I know), to express " ϕx is true for all values of x ". This is what Mr. MacColl calls A^e ; but it exhibits explicitly what the notation A^e conceals, namely the fact that e applies to a propositional function, not to a proposition.

Mr. MacColl claims for his system as against others that his is easy and useful, while the others are hard and rather useless (p. 1). That his system is easier than others must be admitted, but the

¹ Because false propositions imply all propositions.

view that others are not very useful results, I think, from his neglect of modern researches on the transfinite, the principles of geometry, and kindred subjects. This neglect appears, for example, in the remark (p. 103) that "most of the strange and inadmissible paradoxes of the various non-Euclidean geometries" result from confusions as to the infinite and the infinitesimal. As a matter of fact, most modern writers treat non-Euclidean geometry purely projectively or descriptively, so that no metrical ideas occur in their work; consequently the infinite and the infinitesimal are not involved at all.

The present work is not quite in line with those of other current writers on symbolic logic; but it has merits which most of their works do not have, and it serves in any case to prevent the subject from getting into a groove. And since one never knows what will be the line of advance, it is always most rash to condemn what is not quite in the fashion of the moment. In this case, the points of difference are small compared to the points of agreement, and the book will be found highly instructive by beginners, and stimulating by all readers.

B. RUSSELL.

VII.—NEW BOOKS.

The Freedom of Authority: Essays in Apologetics. By J. MACBRIDE STERRETT, D.D., Professor of Philosophy in the George Washington University. New York and London: The Macmillan Co., 1905. Pp. 319.

THIS volume consists of a series of essays which deal critically and constructively with the problem of authority in religion. Apparently it is meant to supplement an earlier work by the author entitled *Reason and Authority in Religion*. Dr. Sterrett maintains "the reasonableness of a man of modern culture frankly and earnestly worshipping in some form of 'authoritative religion'—in any form rather than in no form"; and in a vigorous and confident way he strives to establish his contention. It was perhaps inevitable that there should be a certain amount of repetition in the book, but it would have gained by compression and careful revision. In the preface, indeed, we are told that the larger part was written "*aus einem Gusse*, almost at a sitting". There is surely some exaggeration here. But one has no difficulty in believing that the book was hurriedly written, though the cause of the haste is not obvious. The author's message at least is not new. Besides containing rather more than the average amount of slips and errors of the press, the volume abounds in clumsy and inaccurate phrases and sentences. Some of Dr. Sterrett's feats in the way of word-construction are remarkable, not to say grotesque. For example, "critics cannot so *disconscious* themselves," "an unuttered *un-outered* essence," "*de-religionising* the Church". But it is right to add that, though the work is destitute of literary form, the author's meaning is seldom or never obscure.

It will simplify matters and give a general clue to Dr. Sterrett's argument, if I say at the outset that his standpoint is frankly Hegelian. The unsympathetic will probably complain that there is a good deal of the ordinary Hegelian rhetoric scattered through these pages. Indeed the disappointing thing about the book is, that the author does not realise that some revision of his speculative theory is necessary in order to deal with his problem in a fresh and fruitful way. Dr. Sterrett of course holds that the real is the rational. Religion, in its development through institutions and creeds, is a phase of objective reason, which under pressure of the immanent dialectic advances to the full expression of its inner nature. In the Christian doctrine of the Incarnation the absolute principle of religion was first consciously realised in time, and the development of the Church is the process by which the idea unfolds its latent riches and meaning. Hence in conforming to some institutional embodiment of Christianity the individual comes under no alien yoke; he is rising to his true self-fulfilment, or freedom, through surrender to an objective or divine Reason: *Deo parere libertas est*. As against the mechanical standpoint of Natural Science and the abstract

procedure of the Understanding, our author stands for the Concrete Reason, of which the Christian Church is a growing realisation.

Perhaps the freshest parts of the book are the two essays in which the writer explains and criticises the views of Sabatier, Harnack and the Ritschlians, and M. Loisy. As the interest here is mainly theological, I confine myself to a few remarks. Dr. Sterrett rightly points out the difficulties which beset Ritschlian theologians owing to their refusal to recognise the constitutive function of reason in religion. And he criticises the tendency of Harnack and others to treat the dogmatic creeds of the fourth and fifth centuries as false accretions which obscured the essence of Christianity. Naturally he objects to this separation of essence and manifestation. Yet I cannot but feel that Dr. Sterrett, in his polemical zeal, is hardly fair to the Ritschlians. He is elsewhere forced to admit that arbitrary and non-essential elements have hampered the development of the Christian idea; and to admit this is to concede that Harnack's method is not entirely wrong, though his results may be too drastic. Again Dr. Sterrett is severe on those Ritschlians who do not accept the miraculous element in Christianity. One could understand this if the critic had made it plain that he himself did so. Yet it is not clear to me after reading the book, that the writer regards the Incarnation and Resurrection as more than outward symbols of spiritual facts or processes. To say that "Historical Christianity was founded on miracles of personality" is not to the point, and would be accepted by almost any follower of Ritschl. Naturally our author has more sympathy with Loisy, who strongly insists on the value and necessity of institutional Christianity. But Loisy is justly censured for the divorce he makes between the judgments of faith, which are the utterance of the corporate Church, and the testimony of history, which is regarded as giving no guarantee for these judgments.

Dr. Sterrett supplements the foregoing critical discussion by an essay on "The Historical Method". His standpoint is strongly teleological, and he shows the defects of those who interpret historic development from a merely material (Buckle) or from an economic basis. But though it be granted that the writer is justified in his protest against the tendency—e.g. in Spencer—to construe the more developed through the less developed, yet one finds no adequate recognition of the truth that, when we pass from nature to history, the application of the teleological method becomes vastly more complicated and difficult. The dialectic by which ideas and institutions are supposed to criticise and develop themselves is no sound guide to the historian in the selection and arrangement of his material. And the fact that the "guarantee of the worth and destiny of the finite is only as a member of the total system of the Absolute," is too general and abstract a formula to help him in his valuations. The approach to a Philosophy of History must be on the basis of a broad and a thorough psychology; otherwise speculative theory loses touch with reality. Dr. Sterrett seems to fall into the mistake of hypostatizing logical connexion as a kind of self-subsisting principle; and he overlooks the fact, emphasised by Sigwart, that the ground of real connexion in history lies in the consciousness of the individual. The volume, it should be said, contains an essay on "The Psychological Forms of Religion," which are treated under the heads of feeling, thought, and will. But the writer appears to me to show no proper recognition of the function of feeling and sentiment in the religious consciousness. Feeling for him, as for Hegel, is a preliminary stage which must be transcended, and he inclines to regard adequacy of conception as identical with the satisfaction of the spiritual personality. More than once he is guilty of the exaggeration of speaking of *thinking* as in itself a

religious act. *Das Denken ist auch wahrer Gottesdienst.* The truth is that a purely intellectual being would not be religious at all.

In his concluding essay Dr. Sterrett takes up again the problem of authority in religion, and discusses its ultimate basis. As he leaves out of view the ethnic religions, the question becomes, What is the authority of Christianity? A point the author lays much stress on is, the validity and relative rationality of the historic Church and its creeds; and he rightly urges that the individual Christian consciousness is essentially mediated by the historic Christian consciousness. He seems to suggest that the ultimate authority is a fusion of both factors, the subjective and the objective. Yet the weight must fall on one side or the other: and from Dr. Sterrett's standpoint it must be the reason of the philosopher which is the final authority, for he admits the capacity of speculative thought to criticise and translate into a higher form the historic doctrines of the Church. Indeed this is conceded when it is said, "Philosophy gives the highest authority to religion by demonstrating its absolute not merely its psychological necessity" (p. 276). In other words, we justify religion because we can think out its meaning and value in the system of the universe. The writer's faith in philosophy is excessive. Those who start from the same speculative basis as he does come to the most divergent conclusions on the nature of the Absolute and the value of Christian dogmas. Dr. McTaggart's view of the Absolute is diametrically opposed to Dr. Sterrett's, yet both draw their inspiration from the same philosophic source. I venture to think Dr. Sterrett's spiritual Theism is the result of a personal value-judgment rather than the logical outcome of the speculative theory he adopts.

One or two minor points may be noted. Dr. Sterrett is rather fond of speaking of 'Kantian agnosticism,' yet, as he must know, the term is misleading. For Kant held we have a real knowledge of God, though only in a practical regard. On page 64 Paulsen is classified among Ritschlians. This is inaccurate, for though Paulsen has points of contact with the School, he definitely dissociates himself from the Ritschlian hostility to metaphysics. The reference to Aristotle's *Metaphysics* on page 104 should be to book xii., and on pages 102 and 105 common Latin phrases are wrongly given. Though we do not agree with Dr. Sterrett on a good many points, it is but fair to say that he has written a vigorous and interesting book which will repay perusal.

GEO. GALLOWAY.

The Psychology of Beauty. By ETHEL D. PUFFER. Boston and New York: Houghton, Mifflin & Co. Pp. vii, 286.

We have here an interesting book written in an attractive manner. The author believes that with one important modification of Hegel's definition of Beauty the way is opened from the traditional philosophy of æsthetics to a sound psychological theory of the means by which the end of Beauty is attained. That is to say, we might hope "to express the idea to sense" if we could find for it a form-quality, or subjectively, in the phrase of Kant, a form of reflexion. This must be a combination of unity and totality, *i.e.*, self-completeness. An object is absolutely self-complete only—and this is the heart of the author's position—when it produces a self-complete experience for that subject: "The subject should be not a mirror of perfection, but a state of perfection". The author is opposed to the "expression" or "significance" theories of the Beautiful: "The yellow primrose needs not to remind us of the harmony of the universe, or to have any ulterior significance whatever, if it gives

by its own direct simple stimulation a moment of unity and self-completeness". It remains for the author to endeavour to translate unity and self-completeness into psychological terms. The basis of any æsthetic experience, she says, is beautiful through its harmony with the conditions offered by our senses, primarily of sight and hearing, and through the harmony of the suggestions and impulses it arouses within the whole organism. This is the whole essence of Beauty—the possession of a quality which excites the human organism to a functioning harmonious with its own nature. The means of Beauty are the possibilities of stimulation in the motor, visual, auditory and purely ideal fields; its end a moment of perfection, of self-complete unity of experience, of favourable stimulation with repose. A beautiful object possesses the permanent possibility of creating this perfect moment which yields the unique æsthetic emotion. The æsthetic repose is characterised by that loss of the feeling of self which is associated with certain other important experiences—as religious and scientific absorption. It is, as I should prefer to say, simply a case of the most completely implicit attention. Transition, says the author, between the background and the foreground of attention is no longer possible; the self forms one with the object in the foreground, itself an indissoluble unity. There remains the troubled question of the relation of meaning to Beauty. It is not, the author holds, an integral and essential part: The Idea is subordinate—a by-product unless it can enter into, melt into the form. Visual beauty is first beauty to the eye and to the frame, and the mind cherishes and enriches this beauty with all its own stored treasures.

The author's main position is developed in essays on "Criticism and Æsthetics," "The Nature of Beauty" and "The Æsthetic Repose," and is followed out in detail in other essays dealing with Visual Form, Space Composition, Music, Literature, Drama and Ideas. In dealing with the problem of the presence of Ideas in the work of art, the author denies to Music and Architecture any meaning that is not extraneous. Painting and Sculpture show the first traces of a content, while of Literature ideas are the very material, so that when we speak of the beauty of ideas in Literature we are attempting an artificial sundering of elements that are properly in fusion. As I understand the writer, the Idea can only be integral to the æsthetic effect if we implicitly affirm or accept it, if it in no way disturbs our æsthetic repose. Art that presents a moral ideal against which we rebel is *ipso facto* bad art. Thus literature like that of Thomas Hardy which ignores the freedom of the will fails of beauty. Against such a crude employment of the judgment of value in æsthetics as this I must protest. Who is to judge in such cases? Many highly endowed natures would find perfect harmony and repose in the contemplation of such an idea as determinism. The chapter on Music is very interesting. Rhythm is defined as expectation based on the natural functioning of the attention-period, and as such capable of being brought under the full æsthetic formula of favourable stimulation with repose. It is a good deal harder to follow the author in her effort to bring the Drama under this rubric. The peculiar æsthetic experience connected with the Drama is said to arise out of the tension or balance of emotion in the confrontation of opposing forces. Only in the simultaneous realisation of two opposing forces is the full mutual checking of emotional impulses possible, and the dramatic form gives repose through equilibrium of impulses. Altogether I am left with the feeling that our author's theory works fairly well up to a certain point, and continues to be illuminating throughout on the formal side, but that it begins to prove unsatisfying as form becomes infused with content. The psychological foundation of the work, resting on the extremely doubtful theory

that emotion is identical with its bodily concomitants—"... set up the bodily changes and the feeling of them and we have the emotion that belongs to them even without the idea" (p. 14)—is not strong enough for a lasting theory of æsthetics. Nevertheless I have read the book with real pleasure and hope others may do so. An English writer disposed to take seriously to the study of æsthetics certainly deserves encouragement.

DAVID MORRISON.

Psychiatry: A Text-Book for Students and Physicians. By STEWART PATON, M.D., Associate in Psychiatry, the John Hopkins University, Baltimore. Philadelphia and London: J. P. Lippincott Co., 1905. Pp. xii, 618. Price 18s. net.

This book, as the title indicates, aims at systematising the clinical study of insanity. The first two chapters, covering the scope of modern methods and the nature of the disease process in alienation, attempt a general orientation of the subject; but they are not entirely successful, being here and there somewhat indefinite. The student may get the impression that "a naïve psychology founded upon theory and speculation" (p. 3) is all that psychology as hitherto studied has to offer,—a somewhat important mistake. But what the author offers is, occasionally, somewhat naïve as psychology, and he fails to recognise that "those morbid conditions of the human body commonly but erroneously described as mental diseases" (Preface) may, according to the point of view, be quite correctly described as mental diseases. The aim of these chapters is to indicate the positively scientific standpoint; but the exposition is rather overloaded with authorities and based upon a rather inadequate analysis. Under the Symptoms of Alienation (chap. iii.) we find a general exposition of "Impairment of the Higher Cortical Functions, as Shown in Defects of Judgment and Intellect," and "fixed or insane ideas"; also disorders of attention, of sensation (including hallucinations), of consciousness, of association, of memory, of volition, of emotion, of conduct. But here again the sequence of topics is not very well maintained and the analysis of the concrete cases is not driven home. There are many good paragraphs, but the general impression is somewhat confused. Chapter iv., on the method of examination of patients, is on the whole well done. Chapter v., on the treatment of alienation, omits nothing of importance. The paragraph on "Mental Treatment" (suggestion) is inadequate. Chapter vi., on Hospitals, gives some general directions. Among the causes of insanity (chap. vii.) are enumerated heredity, environment, imitation and suggestion, sex, age, education and fatigue, trauma, etc., as in most text-books. The chapter contains little that is new; but, as in all the more recent text-books, toxic influences of every kind receive special attention. The provisional clinical grouping of mental diseases (chap. viii.) frankly gives up any attempt at scientific classification. As the author becomes more clinical, he becomes much more definite and adequate. There is a good chapter on the defect psychoses (chap. ix.), another on fever psychoses—the deliria, auto-intoxications, confusional insanity, etc.; another good chapter on chronic intoxications—alcoholism, morphinism, etc. Chapter xiii. deals with the "Manic-depressive group," a name that indicates the more modern view of so-called "mania" and "melancholia". The Dementia Præcox group is dealt with in some detail; but here, as in the Paranoia group (chap. xx.), it is extremely difficult to "delimit the frontiers" where the mental variations are so elusive, and the author has to rely, after all, more on purely mental symptoms than on any precisely ascertainable physical

condition. The chapter on Paranoia, particularly, is somewhat vague. The chapter on Dementia Paralytica, with its varying types and stages, is well done. Short sections are given to hysteria, neurasthenia, psychasthenia and the senile psychoses. There is an excellent index. The references are copious and fully given at the foot of the pages. Apart from the somewhat vague sections referred to, the book forms an interesting introduction to a vast department of study. There are some excellent micro-photographs of cortical sections.

W. LESLIE MACKENZIE.

Thought Transference: A Critical and Historical Review of the Evidence for Telepathy, with a Record of New Experiments, 1902-3. By NORTHCOTE W. THOMAS, M.A. London: De La More Press, 1905. Pp. viii, 214.

Crystal Gazing, Its History and Practice, with a Discussion of the Evidence for Telepathic Scrying. By the same. With an Introduction by ANDREW LANG, M.A., LL.D. Pp. xlvii, 162.

These are the first two of a series of small volumes in which Mr. Thomas proposes to sum up in an easily available form the evidence collected since the foundation of the Society for Psychical Research in regard to such subjects as thought-transference, crystal-gazing, ghosts, etc. The volumes will deal with the evidence "critically but sympathetically," and their main purpose will be "to show what a reasonable man without bias in either direction may regard as proved" (Preface). The two before us are arranged on the same plan. An attempt is first made to combat prejudices (or what the author regards as such) which would largely discount the value of the whole inquiry beforehand. Next an explanation is given of the subject of inquiry and the relevant technical terms of "psychical research," such as subliminal, hallucination, illusion, etc. Finally the greater part of the volume is devoted to a statement of the evidence, historical and experimental, for the phenomena under discussion. Of the two volumes, that on *Thought Transference* is the more important. As regards crystal-gazing the lack of exact experimental evidence has apparently constrained the author to fill up with more loosely recorded experiences, which are of disputable value, and a collection of historical notices, which are of little interest to the general reader. In fact, unlike Mr. Lang, whose interesting Introduction to the volume concerns itself with crystal gazing proper, Mr. Thomas seems to attach more importance to its telepathic aspect. As regards thought transference, on the other hand, there is much more experimental material to report and discuss. And yet here, too, even the prejudiced reader, who expects little, can hardly but be surprised by the very meagre quantity and poor quality of the evidence offered. Mr. Thomas's own "sympathetic" treatment of the evidence does not carry him beyond the conclusion that "much more effort, and, in particular, much more systematic effort, is needed before we can safely assert that telepathy is a proved fact" (p. 176). And in view of this one cannot but think that he does less than justice to the reasonableness of the ordinary unbeliever's attitude in the matter. Apart altogether from *a priori* considerations of a metaphysical nature, we must at any rate try to maintain some sense of proportion. And when we are told that "we cannot demand more evidence for thought transference than we do for ordinary transmission of thought [by speech]" (p. 203), it is difficult to take the comparison seriously. By *more* evidence the author doubtless means evidence of a different kind. But even so the warning seems rather uncalled for.

The Problems of Philosophy. By HAROLD HÖFFDING. Translated by Galen M. Fisher, with a Preface by William James. New York and London: Macmillans, 1905. Pp. xvi, 201.

In this interesting little volume the well-known Danish philosopher ranges himself decisively among the champions of that forward movement in science and philosophy which is now making its force felt throughout the world. The significance of this accession is pointed out in the short preface to the English translation (presumably from the German, though this is not stated) of Prof. Höffding's work, in which Prof. James summarises its aim and extracts its pith with masterly lucidity and precision. Prof. James's preface indeed so admirably performs the function of the appreciative criticism which Prof. Höffding's work so well deserves as really to render superfluous any further review from a standpoint so nearly identical with his own, and so much in sympathy with Prof. Höffding's as mine is bound to be. I feel myself therefore reduced to the seemingly ungracious procedure of discovering spots in the sun and of touching (lightly) on the points where Prof. Höffding's treatment seems to fall short of perfection.

The contention which guides Prof. Höffding's whole survey of the philosophic field and is perseveringly worked out in his discussion alike of the problems of consciousness, of knowledge, of being, and of values, ethical and religious, is that in no case do our problems admit of complete unification, does the antithesis between the claims of continuity and discontinuity admit of being resolved into a stable harmony. This contention, as Prof. James points out, suffices to stamp Prof. Höffding as an empiricist and a pluralist and an adherent of the 'ever not quite' view of reality and thought, even though he may still prefer to describe himself for academic purposes as a 'critical monist'. Certainly the criticism must be admitted to preponderate over the 'monism' in a philosophy which adopts the pragmatic conception of truth (pp. 81-84) and unreservedly acknowledges the reality of time (pp. 107, 136, 195, etc.) and the incompleteness of reality (p. 120) and of knowledge (p. 137).

Indeed, if anything, Prof. Höffding, like Prof. James, carries too far the recognition of the 'irrational remainder' (p. 85), which all rationalisms are so desperately anxious to ignore. At heart few irrationalisms are as unreasonable as a thorough-paced rationalism, and it is only when 'reason' has been degraded into the merest catchword that the evidences of the inadequacy of rationalism can be interpreted as proofs of cosmic irrationality. Nay, I venture to suggest that even 'discontinuity' is not as such a token of irrationality, and that it may betoken the joyous exuberance of health when a universe takes to jumping instead of crawling. The 'discontinuities' which torment us and are what Prof. Höffding really means to refer to, are of a very different kind. They are the painful jolts and crushing catastrophes of the course of nature, and it is only by a very euphemistic and intellectualistic meiosis that they are described as 'discontinuities' at all. In plain English they are *evils*, and they are intellectual problems only because they are first of all moral problems. If then there really is something wrong about the universe of our experience, it is folly to attempt to conceal the fact under a veil of intellectualistic phrases, and a 'monism' which attempts this is not 'critical' so much as hypocritical. Prof. Höffding, however, is far too honest to stain his conscience with such subterfuges; he admits quite frankly that something is wrong, and consequently his selection of the antithesis between continuity and discontinuity as the deepest in the universe strikes one as a little incongruous and inadequate. Surely it is the distinctions

of value, and more especially that between 'good' and 'evil,' which rend the universe in twain from end to end, and render a real monism such a pathetically unreal view of life.

The smoothness of the translation deserves a word of praise, and I have discovered only one (a curiously amusing) error. On page 168 we read that "history is the great voting place for standards of value". But history, unfortunately, still displays a barbarous predilection for breaking heads instead of counting them, and so the German *Wahlstatt* (or its Danish equivalent ?) still means a *battlefield* and not a *voting place*!

F. C. S. SCHILLER.

The Unit of Strife. By E. K. GARROD. London: Longmans, Green & Co., 1905. Pp. 1, 194.

The aim of this work is to discuss how far similarity of conditions characterises development in the merely animal and in the human sphere; and how far evolutionary conceptions fail to explain the facts of human society. The problem is not a new one, nor can any substantial novelty of treatment be discovered. The opening chapters—perhaps the best part of the book—show how the "unit of strife" has been successively the single cell, the individual organism, the family, the tribe, the nation; and that development throughout depends on differentiation and co-operation, "the fittest unit at all times being the most cohesive and extensive" (p. 67). This *résumé* of current biological doctrine serves as an introduction to the main purpose of the author—to explain the distinctive character of human progress. The reason, after the work *e.g.* of Green, Ritchie and Fouillée, one might have thought 'an old story,' and one is therefore surprised to find that the suggestion tentatively offered with a (modestly expressed) conviction of its novelty (pp. 5, 180) is "the development of an abstract consciousness" (p. 33) (why abstract ?) through which man gains a knowledge of nature, of the conditions of development, and acquires the power of consciously adapting means to a conceived end. But according to our author the influence of mind on conduct is mainly "evil". It perverts the natural instincts which "when unconcerned with mind, work . . . sanely to their end" (p. 72)—the unity and cohesion of the whole—and introduces or exaggerates disruptive qualities. This doctrine is enforced in a passage of amazing rhetoric, which is typical of the author's style: "The instincts of self-importance and self-gratification feed and fatten on thought, and grow to hideous proportions. Cruelties and lusts come into being which, with agile minds to conceive them and sensitive minds to suffer them, degrade man far below the level from which he began his upward course, and compel the imagination to conceive of hells, peopled by similar degraded beings, where punishments suitable to such offences may hereafter be enforced" (p. 72). The social tendency, in spite of the remarks on "sympathy" (p. 52), is therefore not natural. (We are thus thrown back to the days of Hobbes, and the progress of thought is as if it had not been.) The "morbid influence of mind" (p. 170) has to be counteracted by a "Force from without man," and so Religion—belief in God, the "Power at the back of law" (p. 84)—enters as a *deus ex machina* to supply the condition of social unity against which mind continually battles.

Such a doctrine hardly deserves serious consideration. An erroneous psychology which assumes as absolute the antithesis between religion and reason, and a perversion of history which makes religion the one and unfulfilling principle of unification, are strange foundations on which to rest a Sociology. The teaching of the Greeks and of modern Idealists that Reason is the 'Source of the idea of a Common Good' has ap-

parently no significance for the popularisers of Comte and readers of Mr. Benjamin Kidd, whose influence in the present volume is supreme.

The superstition which hypostatizes or deifies laws of nature—a relic of primitive Animism—(cf. Ritchie, *Philosophical Studies*, p. 105) is certainly not to be expected in any serious work. Yet the author apparently regards such laws (e.g. Natural Selection) as "Powers" or "Agencies" which "operate from beyond the world" (p. 34) and force things into obedience with their will. Ordinary forms of language may be responsible for much, but when we read about the "leverage of the Force" and the "arm of the lever" (p. 81) a suspicion arises that we have passed from an apparent confusion due to language to a very real confusion in thought.

JOHN SIME.

Life and Matter: A Criticism of Professor Haeckel's "Riddle of the Universe". By Sir OLIVER LODGE. London: Williams & Norgate, 1905. Pp. viii, 200.

The Interpretation of Nature. By C. LLOYD MORGAN, LL.D., F.R.S. Bristol: J. W. Arrowsmith; London: Macmillan & Co., 1905. Pp. 164.

These little books deserve to be widely read, above all among those who, without any special scientific knowledge, are yet intensely and intelligently interested in the conclusions of men of science regarding the ultimate nature of reality. They ought to prove a wholesome corrective to such precipitate efforts at simplification and unification as that of Prof. Haeckel, efforts which, as Sir Oliver Lodge says, not only underestimate some classes of fact, but also stretch scientific theory into regions of mere guesswork where it loses touch with real science altogether. Some may think that Sir Oliver Lodge is not altogether free from the latter defect himself; but his book remains a calm and weighty protest against the grim attempt to sacrifice the reality which is best known and most precious to us on the altar of methodological assumptions. Sir Oliver Lodge upholds the view that Life is neither matter nor energy, or even a function of matter or energy, but something belonging to a different category; that by some means at present unknown it is able to interact with the material world for a time, but that it can also exist in some sense independently, although then not apprehensible by our senses. Its essential existence is continuous and permanent: its interactions with matter discontinuous and temporary. Moreover he conjectures that it is subject to a law of linear advance. Except in the last particular, he considers magnetism to offer the best analogy to life: we now know that electrically generated lines of force need no matter to sustain them, although they need matter to display them. This is held by Sir Oliver as a working hypothesis, the only one which enables him to fit the known facts of vitality into a thinkable scheme. Dr. Lloyd Morgan seeks to prove that the conception of *purpose* is for rational thought not less valid than that of mechanism. If purpose underlies and rationalises our thought and experience, it must underlie the perceptions of daily life and the conceptions of science in their objective reference. His own experience assures him that there is a causal agency underlying the sequence of mental configurations; that there is something within him which unifies and relates and orders them. This is what he understands by *purpose*, and utilises in the interpretation of nature as an ideal construction founded on experience. If one believes that, in the purpose which unifies, directs and determines the course of

his own experience there is a real causal agency, he cannot escape the conviction that it is in constant relation to a wider purpose of the same order of being, but free from his limitations. It is the aim of Dr. Lloyd Morgan to show that a belief in purpose as the causal reality of which nature is an expression is not inconsistent with the full acceptance of the explanations of naturalism within their appropriate sphere. He admits, nay, contends, that the existence of such a unifying agency is not a scientific conception: it is not a phenomenon though manifested by phenomena. It is, if you will, a postulate of reason, a regulative principle, as valid for rational thought as mechanism. Determinism is purpose finding expression in determinate sequence; and, just because he believes that all that science discloses is the manifestation of a continuous purpose, he believes that the manifestation is itself continuous, and the origin of life and mind ideally capable of explanation in terms of antecedence, co-existence and sequence. Both writers regard Life as a directive force, but while Dr. Lloyd Morgan, accepting the concomitance of the ideal constructions of physiology and psychology, sees no objection to an all-embracing mechanical interpretation, Sir Oliver Lodge asserts that no mechanical analysis can be complete and all-embracing. Guidance and control are not forms of energy, or phantom modes of force, and their superposition upon the scheme of physics need perturb physical and mechanical laws no whit. It is only necessary to recognise that the laws of physical science are *incomplete*, when regarded as a formulation and philosophical summary of the universe. Their determinateness is got by the sheer assumption that no undynamical or hyperdynamical agencies exist. For him Life and Mind are outside the scheme of mechanics. It is, moreover, simply untrue to say, as Haeckel does, that the modern physicist has grown so accustomed to the conservation of matter that he is unable to conceive the contrary. It is quite easy to conceive the identity of the electrons lost, so that the destruction and even the creation of matter are well within the range of scientific conception, and may be within the realm of experimental possibility (p. 33). Monism must not signify a limitation of mind to the potentialities of matter as we at present know it.

In detail Dr. Lloyd Morgan is extremely interesting. He would restrict the term "intelligence" to the guiding factor in behaviour as the result of experience when it falls within what Dr. Stout calls the perceptual sphere. Just as the instinctive factor provides data which intelligence deals with so as to shape it to more adaptive ends, so does the perceptual factor provide the more complex data which, through ideational process, are raised to a yet higher level in rational conduct, where a situation is developed, not only in accordance with the impulse value arising therein, but also, and in a greater degree, in accordance with the motive worth for a system. And he argues that to this should correspond a further differentiation within the control system itself. The Tenth Division of his book in which this subject is discussed is particularly well worth reading.

DAVID MORRISON.

Optical Illusions of Reversible Perspective: A Volume of Historical and Experimental Researches. By J. E. W. WALLIN. Profusely illustrated. Published by the Author, Princeton, N.J., 1905. Pp. vi, 331. Price \$1.85 (paper), \$2.25 (cloth).

The central portion of this book consists of a report of experiments on perspectivity in momentary exposures (with student observers) and on the

effect of suggestion upon perspectivity (with school-boy observers) made by the writer at Clark University. Other and later experiments are concerned with the effect of practice on perspective presentations, the duration and alternation of perspective reversions, the distance equation of black and white rods, the influence of continued fixation, etc. An elaborate historical review has been prefixed to the experimental studies; and the book ends with a chapter on theory, in which the psychophysical or 'perception' theory is upheld against the psychological theory of 'judgment'.

The author's aim, throughout, is completeness. The historical survey "purports to be an exhaustive digest of all that has been said and done along (*sic*) the subject treated"; "the utmost historical fidelity is attempted" and the treatment is strictly chronological. So with the experiments: "the attempt has been made to give full *Tables*, rather than mere excerpts, summaries, 'typical,' 'general,' or 'representative' values". While the present reviewer must confess to sympathy with this point of view, he cannot but feel that the writer, in his adoption of it, himself shows a lack of perspective. The five historical chapters, for example, bring together materials which, after all, are for the most part easily accessible to any one who wishes to find them, but which might, in large measure, remain buried without any special loss to psychology. Besides, no summary, however complete, can take the place (except for its author) of recourse to the original literature: it is the workers at secondhand who will profit by these chapters. Where, on the contrary, completeness would be really valuable—in the writing out of introspections and in the correlation of the experimental results with earlier observations—the book confessedly falls short (pp. 96 f.).

The author has been obliged to publish at his own expense: which means, presumably, that publishers' readers have adjudged the work to be unsaleable or scientifically inadequate. The former, no doubt, has been the motive which determined rejection. But there can also be no doubt that the writer would have done better, first, to print his experimental records in some technically psychological journal, and then to work up his final chapter, in the light of his historical knowledge, into a separate article or possibly into a small book. This chapter contains good work, constructive and critical, and with aid from the initial chapters might have been made extremely interesting to the general reader. While, therefore, the reviewer heartily admires the pluck and determination with which Dr. Wallin has worked, he cannot approve the judgment shown in the chosen mode of publication.

E. B. T.

Biographic Clinics, vol. iii. : *Essays Concerning the Influence of Visual Function, Pathologic and Physiologic, upon the Health of Patients*.
By G. M. GOULD. Philadelphia : P. Blakiston's Son & Co., 1905.
Pp. viii, 516.

The first two volumes of Dr. Gould's *Clinics*, reviewed in *MIND*, xiii., 130, 432, attempted to show that the ill-health of certain distinguished men was the direct effect of eye-strain. The present volume contains two further studies of this kind, devoted to J. A. Symonds and to Taine; but the greater portion of the book is made up of papers, reprinted from medical magazines, in which the author's views are confirmed by illustrative cases, the theories of opponents are examined and their objections met, and recommendations are offered in matters of school hygiene. A newly written Introduction sums up the evidence to 1905. Then follow articles on the new ophthalmology and its relation to general medicine,

biology and sociology; the history and etiology of migraine; the optic and ocular factors in the etiology of the scoliosis of school children; visual function the cause of slanted handwriting—its relation to school hygiene, school desks, malposture, spinal curvature and myopia; dextrality and sinistrality; the pathologic results of dextrocularity and sinistrocularity; subnormal accommodation and premature presbyopia; the reception of medical discoveries; some problems of presbyopia. There are two appendices, on suggestions as to postmydriatic refraction tests, and a case of 'mathematically perfect' eyes; and papers are included by Mr. S. Snell, Professor of Ophthalmology, University College, Sheffield, on eye-strain as a cause of headache and other neuroses, and by Mr. C. E. Pronger, ophthalmic surgeon to the Harrogate Infirmary, on slight errors of refraction and their influence on the nervous system. The reprinting of articles involves a good deal of repetition, which extends even to the figures inserted in the text: but the repetition of a sound argument in different contexts is no bad thing in itself, and may, in the present instance, serve to carry conviction to the reader. The three volumes, supplemented by general reading in the medical magazines, have convinced the reviewer that Dr. Gould has, in the large, made out his case. And those who still raise the cry of the specialist's hobby should remember that, even if but one-tenth of what Dr. Gould asserts is true, his proof of that tenth constitutes a heavy indictment of current medical practice, while its neglect is curtailing the best work of the world in science and letters.

E. B. T.

Psychology for Music Teachers. By HENRY FISHER, MUS. DOC. CANTAB.
London: J. Curwen and Sons. Pp. 181.

This book would have been better if its author had attempted less. In order to bring the methods of teaching music into line with scientific principles, Dr. Fisher has studied some modern books on psychology. And his practical hints show that he has profited by his reading. If he had been content to map out a scheme of teaching by which the pupil is led from percept to concept, from sense-impression to symbol, and from symbol to interpretation; by which the processes of Analysis and Synthesis are employed in the upbuilding of musical knowledge, and the acquirement of practical skill; by which the simple leads to the complex, and habituation is seen to result in nimble facility, he would have performed a service which is probably needed.

But for an introduction to psychology it would have been better that he had recommended to his pupils a recognised text-book. He has been able to profit by his own reading in the subject sufficiently to see the lines on which teaching should proceed, but certainly not enough to justify him in writing about psychology. This is clearly shown by sentences like the following: "Not until (atmospheric vibrations) have been received into the mind, where, by means of the auditory nerve, they are transmuted into sound, do they become subjective" (p. 12). "It is only when the sensation of light is impressed upon the mind that it becomes subjective" (p. 12).

His experience has however enabled him to supply us with at least one interesting fact. "There is a peculiar form of stammering which is displayed by a considerable number of pupils. It consists in the striking of a note several times instead of only once. As a rule, pupils are quite unconscious of this fault." The book contains a great deal of loose talk, which tends to conceal much that is valuable. It is another proof that "the cobbler should stick to his last".

JOHN EDGAR.

Psychology: An Exposition in Popular Form, Designed for the Use of Students and of Readers in General. By ALFRED COOK, Ph.D.
New York: Hinds, Noble and Eldredge.

The quality of this book may be illustrated by the quotation of its first paragraph: "It is a curious fact that we exist on this earth as part mind and part body, a fact not sufficiently taken into account. More curious still, the body is a machine of the mind by means of which the mind has sensations. What, then, are sensations? Nervous tinglings in the mind whereby it has intimations of things." The most striking feature of the book is the number of platitudinous remarks and illustrations, *e.g.*, "If we try to accomplish too much, like the boy who put his hand into the jar of filberts and grasped so many that he could not get it out, we accomplish nothing. It is known that if one learn but five words a day he will in two years learn three thousand," or again, "Learning a vocabulary is like going over a mountain—step by step we approach the other side, but we cannot jump over the mountain". The author is not content to attempt to expound the accepted doctrines, he aspires to originality, *e.g.*, he bases his chapter on memory on the great principle of multiplicity, the principle that "it is harder for us to remember many things than a few," apparently regarded as a new discovery of some importance. It is to be hoped that no one will be so misguided as to spend his time over this book when so many infinitely better books on psychology are in the market.

W. McD.

Congrès International de Philosophie, 2me Session, Tenue à Genève du 4 au 8 Septembre, 1904. Rapports et Comptes Rendus. Publiés par les soins du Dr. ED. CLAPARÈDE, Secrétaire Général du Congrès. Avec 17 figures et 5 portraits hors texte. Genève: Henry Kundig; London: Williams & Norgate, 1905. Pp. vii, 974.

It must suffice to give here an indication of the varied and valuable contents of this large volume, which contains all the papers, except four, actually read at the Congress, and, in addition, some half-dozen written for it but not actually delivered. The opening address by Prof. J. J. Gourd, the President, was followed by one from the honorary President, Prof. E. Naville, who selected as the abiding problem of Philosophy the one formulated by Aristotle: how to admit the plurality given by the senses along with the unity conceived by the reason. Under the heading "Séances Générales" we have the following papers with an indication of the discussion which followed them: Prof. Boutroux, "Rôle de l'histoire de la philosophie dans l'étude de la philosophie". The study of the history of philosophy may awaken philosophic ability, and teaches the individual to unite his thinking with universal thought. Prof. Ludwig Stein, "Was heisst Philosophie?" It has to discover and systematically present that unity of nature and spirit of which other sciences have only a partial insight. Prof. J. J. Gourd, "La définition de la philosophie". Prof. Windelband, "Die gegenwärtige Aufgabe der Logik und Erkenntnislehre in Bezug auf Natur- und Kulturwissenschaft". Increasing importance of the science of history. History is only possible as a science if there are universally valid values which contain the ground for the selection and synthesis of facts. Prof. Vilfredo Pareto, "L'individuel et le social". Prof. J. Reinke, "Der Neovitalismus und die Finalität in der Biologie". What Mechanism proclaims as a dogma is to

Neovitalism a problem. Mechanical processes in organisms are held together, not to say governed, by final active forces, comparable to the spiritual forces of men. Prof. Alfred Giard, "Néovitalisme et Finalité en Biologie". Critical of Reinke. Under the heading of "Rapport présenté à la section de Philosophie Appliquée," we have from Prof. Boistel, "Conception des personnes morales". The "Travaux des Sections" comprise (1) "Histoire de la philosophie," (2) "Philosophie générale et psychologie," (3) "Philosophie appliquée," (4) "Logique et philosophie des sciences," (5) "Histoire des sciences". (Being the Third International Congress of History of the Sciences.) Among the papers read in the various sections were the following: (1) Prof. Straszewski, "Méthode comparative dans l'histoire de la philosophie"; Prof. C. Piat, "Les idées dans les dernières dialogues de Platon"; Prof. Bovet, "Louis Bourguet, son projet d'édition des œuvres de Leibniz"; Prof. Geijer, "La sagesse du docteur Bonhomme" (a study of the philosophy of Gustave de Léopold); Dr. Anna Tumarkin, "Kants Spiel der Kräfte"; Prof. Windelband, "Fichte und Comte"; M. Xavier Léon, "Fichte contre Schelling". (2) Prof. Couturat, "Rapport sur les progrès de l'idée de la langue internationale"; Prof. Strong, "Quelques considérations sur le pansychisme"; Dr. J. Cohn, "Anschauung und Begriff"; Prof. Bergson, "Le parallogisme psychophysiologique"; Prof. Rauh, "Sur la position du problème du libre arbitre"; Prof. Peillaube, "La détermination des éléments de la vie consciente"; Prof. Gheorgov, "Die ersten Anfänge des sprachlichen Ausdrucks für das Selbstbewusstsein bei Kindern"; Prof. Alexander, "Die Einheit des Seelenlebens und seine verschiedenartigen Ausserungen". (3) M. Lapie, "Technique et Téléologie"; Prof. Grotenfelt, "Die Massstäbe der geschichtlichen Wertschätzung"; M. Aars, "Les idées morales et l'hérédité antimorale"; M. Darlu, "Sur l'état dans la démocratie"; Dr. Karmin, "Sur la terminologie des doctrines politiques et sociales". (4) M. Fehr, "Sur la fusion progressive de la logique et des mathématiques"; Prof. A. Naville, "La notion de loi historique"; Prof. Milhaud, "Note sur l'idée de science"; Prof. Couturat, "Sur l'utilité de la logique algorithmique"; M. Pierre Bouthoux, "Sur la notion de correspondance dans l'analyse mathématique"; Lieutenant-Colonel Hartmann, "Définition physique de la force". (5) M. Jules Tannery, "Paul Tannery"; Paul Tannery, "Les Cyranides"; Dr. Erich Schmidt, "Deutsche Volkskunde im Zeitalter des Humanismus und der Reformation"; Karl Sudhoff, "Neuere Wertungen Hohenheims"; Prof. Zeuthen, "Théorème de Pythagore: Origine de la géométrie scientifique"; Prof. Duhem, "De l'accélération produite par une force constante: notes pour servir à l'histoire de la dynamique"; M. V. Mortet, "Géométrie pratique au moyen âge"; Prof. Lebon, "Pour l'histoire des hypothèses sur la nature des taches du soleil".

La Logique des Sentiments, par TH. RIBOT. Paris: Félix Alcan, 1905. Pp. x, 200.

This is a characteristic work. Clear-sighted observation and an extraordinary lucidity in the exposition of details are combined with a somewhat faulty logical scheme together with something unsatisfying in the way in which ultimate problems are handled. The opposition throughout of *la logique affective* to *la logique rationnelle* produces an artificial antithesis which is, on the whole, misleading. In spite of our author there are not two logics in existence. The distinction might have been much better expressed as that between logical and emotional inference; or the essay might have been styled 'the predominance of emotional

over logical interest in reasoning'. The subject is one of great importance for psychology. The logician merely brings down a particular fallacy and displays it alongside of the other offenders of its species; to the psychologist is left the natural history of the sophism. Moreover the actual confusion of thought which would lead any one to advance a fallacy as a logical proof is not of primary interest and is indeed not discussed by M. Ribot. He describes rather what Mill called the moral causes of error in reasoning; to be more accurate, it is the influence which leads us to adopt a particular conclusion quite apart from any interest we may have in its logical validity. The phenomena discussed, though not grouped according to any very satisfactory principle, are in themselves interesting. Thus we find an account of the effect which a state of passion, *e.g.* fear, produces on the process of inference; the phenomena of conversion and of the transformation of emotions are also described, together with the habit of justifying, on apparently logical grounds, a belief held really on account of the emotional satisfaction it affords.

M. Ribot talks of emotional reasoning as effecting itself by means of a series of judgments of value; 'values' are the middle terms of the logic of the emotions. But to compare these to a series of middle terms in syllogistic reasoning is only confusing; the 'judgment of value' must rather function as a single axiom over-riding all others and allowing us to draw conclusions agreeing with it alone. The final problem, as to why certain beliefs should cause a specific emotional satisfaction, M. Ribot does not discuss.

He includes a chapter dealing with a subject which, as is admitted, has little to do with reasoning, namely the productive imagination. Here it is claimed that the imaginative creation of emotional states is possible, that it forms the basis of musical composition and is the essence of mystical religion.

G. R. T. ROSS.

Die Aufgaben des Mittelschullehrers. Von Prof. Dr. WILHELM JERUSALEM. Vienna and Leipzig: Wilhelm Braumüller, 1903. Pp. 64.

Dr. Jerusalem has already written several books on Psychology and Pedagogy. In this pamphlet he gives the mature thoughts of a cultured and experienced teacher on the work and function of the Secondary School. The Mittelschule of Austria holds a position similar to the Gymnasium in Germany, and the best type of Secondary School in this country. As its name implies it comes in the educational system between the Elementary School and the University, and naturally leads up to the latter. In this class of schools the teacher must be a highly educated man, and his task is here considered from three points of view—(1) the scientific; (2) the pedagogic-didactic; (3) the social.

I. Dr. Jerusalem shows under the first how in every branch of study the scope is extending. It is the duty of the teacher to keep himself by continuous study abreast of progress in his own and cognate departments, but it is impossible with the time at his disposal to do original work and be a producer. Scientific work has a receptive and a productive side. Original investigation is the sphere of the University Professor, but for the teacher of the Middle School the receptive side of scientific work is more important than the productive.

II. Every subject of instruction has its own independent didactic task. And every type of school has its special function. The elementary school equips all its pupils with such a minimum as will make them

better fitted for the working duties of life. The University "gives its students freedom to work or not as they please".

Between these two extremes comes the Middle School, and its fundamental pedagogic task must be to train its pupils to *independent intellectual work*. The further the pupils advance the deeper must be their feeling of responsibility. In this habituation to independent work and responsibility lies not only a sure guarantee that the scholars will learn, but also a moral influence of the highest importance. There can be no better endowment for a future career than habituation to regular work, and a sense of responsibility for its success.

III. As the curriculum of these schools is practically fixed by the state, the teacher has no direct influence in deciding what the future clergymen, doctors, lawyers and teachers must learn. But he is chiefly responsible for the way in which the pupils go through the curriculum, and his judgment decides as to their fitness for a leaving certificate. It is because of his responsibility in deciding as to ripeness or unripeness that the teacher becomes an instrument of social selection. "The intellectual and moral development of the future generation will depend upon the conscientiousness and wisdom with which he performs this social selection."

His social influence may also be shown in the manner and degree with which he inspires his pupils with the social spirit, and leads them to understand that every one of them is to-day born into a cultivated social organism. To this his life owes much, and therefore he is debtor for consecration of his time, ability and service to the public interest, and to social progress.

JOHN EDGAR.

Beiträge zur Einführung in die Geschichte der Philosophie. Von RUDOLF EUCKEN. Leipzig: Dürr'sche Buchhandlung, 1906. Pp. 192. Price 3s. 9d.

This is a re-publication of the author's *Beiträge zur Geschichte der neueren Philosophie* which appeared in 1886. All the essays have been revised and brought up-to-date; those on 'Trendelenburg' and 'Parteien und Parteinamen in der Philosophie' have been changed considerably. Two altogether new essays are now added. The first, on 'Bayle and Kant,' shows that Bayle was not a pure Sceptic and never abandoned himself wholly to the doctrine of the 'relativity of truth,' but, on the contrary, shows affinities with Kant's critical philosophy. Thus, in his theoretical philosophy, he recognises to be inherent in reason many of those contradictions which Kant afterwards called the 'Antinomies,' though he did not, like Kant, supply a solution. In practical philosophy he is, like Kant, an opponent of Empiricism and Utilitarianism.

The second new essay on 'Gedanken und Anregungen zur Geschichte der Philosophie' suggests a number of points of view from which fresh light might be thrown on the history of philosophical systems (e.g. the influence of metaphors, technical formulæ, parties and partisanship, etc.). And above all, history must not be a mere collection of facts, but we must have a central principle to serve as connecting link and put all the facts in their proper light. This principle Eucken takes from his own philosophy, and in this connexion gives a short, but admirable and illuminating account of his own point of view (pp. 156-169) which distinguishes a 'technical' and a 'personal' method in philosophy, and regards philosophy in the latter sense as concerned with the building-up of a spiritual reality.

R. F. A. HOERNLÉ.

Grundbegriffe der Kunstwissenschaft. Von A. SCHMARSOW. Leipzig : Teubner, 1905. Pp. x, 350.

Dr. Schmarsow's book is of more interest to the student of the history of art, than to those interested in its psychology or in philosophical æsthetics. His general standpoint, not without divergence in matters of detail, is that of Alois Riehl, in his *Stilfragen* and *Beiträge zur Aesthetik der bildenden Künste*, who sees in the work of art "das Resultat eines bestimmten und zweckbewussten Kunstwollens, das sich in Kampfe mit Gebrauchszweck, Rohstoff und Technik durchsetzt". The psychological treatment, which is to be found in chapters iv. to vii. is slight, and is concerned mainly with symmetry and proportion, composition, and rhythm, without making any addition to what has already been written on these subjects. This is of course to be expected in a work professedly only applying what general æsthetic principles have been established to the explanation of the evolution of art-forms. The arts studied are almost entirely sculpture, painting and architecture, and the treatment of the historical relations of these, though again necessarily slight, is perhaps the best thing in the book.

A. R. BROWN.

Logica Formale dedotta dalla considerazione di modelli meccanici. By ANNIBALE PASTORE, Libero docente di Filosofia teoretica nella R. Università di Genova. Torino, 1906. Pp. xxiii, 258.

In this work mechanical models are constructed on a plan which is intended to make the models work for valid moods of the syllogism and not for invalid moods. The author recognises that the syllogism is not the whole of symbolic logic, and regards his present work as merely a beginning. The models are ingenious and simple, but they work in some cases not commonly admitted as valid, for example 00A in the fourth figure. There is a discussion of these cases which is rather hard to follow; the upshot seems to be that they are valid under certain limitations, and that it is as well the models should admit them. The author sums up his results as follows (p. 249): "In substance, I have proved that the method of ideophysical models has its fertile use, in the examination of logical facts, both as an instrument of demonstration and as an instrument of research. It cannot be denied that the investigations made with the help of models have in many cases not only reconstructed, but rectified and completed the theory of logical relations, with an exactness unknown to the ordinary teaching. Since, therefore, direct proof shows that, by the construction and the very simple working of an apparatus (an experimental model) we do the same thing which might be done less conveniently by reasoning or calculation (a rational model), it follows that the facts which compose the abstract theory may be held to be justified experimentally." We are left in doubt as to how a person who would not assume the elementary principles of deduction could assure himself that his models must illustrate these principles and must work in a certain way. For this reason, the theoretical importance of a logical machine cannot, it would seem, be as great as Dr. Pastore supposes. His view on this point, it should be said, is supported by a general philosophy which is set forth in the first part of the book.

B. RUSSELL.

Proceedings of the Aristotelian Society, New Series, Vol. V., containing the Papers read before the Society during the Twenty-sixth Session, 1904-1905. London: Williams & Norgate, 1905. Pp. 188.

The volume opens with a paper from the President, the Rev. Dr. H. Rashdall, on "Moral Objectivity and its Postulates," which contends that our moral ideas must be regarded as more or less adequate revelations of the divine standard of values, and that there can be no real harmony, or perfection, or absence of contradiction in any system of the universe in which our highest ideals of value are contradicted. To other postulates of an objective morality, he should like to add the negation of an unqualified optimism. The natural inference from our actual ideals and experience is a belief in a God who wills the good (as we inadequately and imperfectly know it) but does not wholly attain it. Mr. Henry Sturt finds "The Line of Advance in Philosophy" to lie along a fuller recognition of the importance of striving in human experience, and of the self as a creative force able to strive with a world of forces, growing thereby increasingly self-conscious and purposeful. Mr. W. R. Boyce Gibson deals with "Self-Introspection," contending that we must accept the point of view of the experient of self-consciousness. Self-consciousness, as the true and ultimate form of psychical observation, is the self's observation of itself as such; it is not a relation between subject and object, but the existential oneness of the subject that knows and of the subject that is. The bearing of this analysis on the starting-points of Descartes and of Hegel is discussed. Mr. J. L. McIntyre's paper on "Value-Feelings and Judgments of Value" is an effort to throw some light on vexed questions by giving an analysis of the value-phenomenon and considering its relation to feeling, desire and presentation. The value of an object is its relation to the activity of an individual as a whole. Value is never the character or quality of an object, but always a relation between an object and a subject. The origin of the value-phenomenon lies in the transition from one situation to another mediated through a change in the subject himself of the nature of voluntary activity. Every life, so far as successful in its striving to be a whole, modifies, subdues, perhaps converts into their opposites the individual values with which it sets out. If there is an absolute end to which our limited and subjective valuations are instrumental we cannot say what it is. Mr. A. T. Shearman in his paper on "Some Controverted Points in Symbolic Logic" deals with Symbols as representing Classes and Propositions, Symbolic Logic and Modals, Symbols of Operation, the Province of the Logic of Relatives and the Utility of Symbolic Logic. Mr. Clement C. J. Webb gives a paper on "The Personal Element in Philosophy" insisting *inter alia* on the importance of finding out what is meant by Personality. A person aware of himself as unique knows also that he is part of a whole which is all of it his concern and apart from which he would lose his own significance. The greatest personality is most fully conscious of its character as an organ of the universal and of the special function which it, and it alone, discharges in the economy of the universal life. In "The Metaphysical Criterion and its Implications," Mr. H. Wildon Carr subjects Messrs. Bradley and Taylor to criticism, examining the proposition that the criterion of reality affirms the existence and nature of the Absolute, and maintaining that a criterion by its nature cannot itself constitute our positive knowledge of the existence and content of any object of experience. The proposition that the Absolute is an individual experience is based on a meaning of reality quite distinct from that demanded by the criterion; while the two positive characteristics of the Absolute, that it is self-consistent reality, and that it is indissolubly one with ex-

perience, have no necessary connexion with one another, and are arrived at by quite separate arguments. The Absolute is no solution of the problem of reality. As object known it must affirm all the contradictions it is constructed to get rid of. If knowledge is of the real and not itself reality, ultimate scepticism cannot be excluded. Some remarks by Mr. Shadworth H. Hodgson are appended to this paper. The volume concludes with a paper on "Idealism and the Problem of Knowledge and Existence," by Dr. G. Dawes Hicks, in which he begins by comparing the positions of Berkeley and Hume to show that Kant was justified in drawing the contrast he did between his idealism and Berkeley's, and goes on to prove that his Critical Philosophy has provided us with a method of criticising much of the prevalent idealism. Knowledge and existence are two aspects of one interconnected reality, neither arising from nor evolved out of the nature of the other. The contents of knowledge are not existents; existents are not as such contents of knowledge. We have two modes of reality; the reality of validity or truth, the reality of existence. Existence is not that to which truth must correspond; it would be nearer the mark to say that truth is that to which existence must correspond. The existent is not as such the ultimately real; it is only that part of the real by means of which apprehension of truth comes about.

Received also :—

- George Trumbell Ladd, *A Philosophy of Religion, A Critical and Speculative Treatise of Man's Religious Experience and Development in the Light of Modern Science and Reflective Thinking*, London, Longmans, Green & Co., 1906, 2 vols., pp. xx, 616, and xii, 590.
- John McTaggart Ellis McTaggart, *Some Dogmas of Religion*, London, Edward Arnold, 1906, pp. xx, 299.
- Edward Bradford Titchener, *Experimental Psychology, a Manual of Laboratory Practice*, vol. ii., "Quantitative Experiments," part i., "Students' Manual," pp. xli, 208; part ii., "Instructor's Manual," pp. clxxi, 453, New York and London, Macmillan, 1905.
- Otto Weininger, *Sex and Character*, authorised translation from the sixth German edition, London, Heinemann; New York, Putnam's Sons, 1906, pp. xiii, 356.
- Hugh Northcote, *Christianity and Sex Problems*, Philadelphia, F. A. Davis Co., 1906, pp. ix, 257.
- George Ainslie Hight, *The Unity of Will, Studies of an Irrationalist*, London, Chapman & Hall, 1906, pp. xv, 244.
- Charles Stanton Devas, *The Key to the World's Progress, being an Essay on Historical Logic*, London, Longmans, 1906, pp. xi, 321.
- Alfred J. Martin, *Martin's Tables, Imperial, Metric, Indian and Colonial Measures and Weights, Simple Suggestions for Metric Adoption, Imperial Decimal Coinage, etc.*, London, T. Fisher Unwin, 1906, pp. xiv, 271.
- Religions, Ancient and Modern*: "Ancient Greece," Miss Jane Harrison, pp. 66; "Ancient China," Prof. Giles, pp. 70; "Pantheism," J. A. Picton, pp. 96; "Animism," Edward Clodd, pp. 100, London, Constable, 1906.
- The Writers and Artists' Year-Book, 1906: A Directory for Writers, Artists and Photographers*, London, A. & C. Black, pp. 78.
- Ambrose Zandt, *Lex Helicis, The Story of Creation*, translated by M. Boston, Farrington Printing Co., no date, pp. 22.

- Smithsonian Institution, *Bureau of American Ethnology, Mexican and Central American Antiquities, Calendar Systems and History*, 24 papers, by Seller, Förstemann, Schellias, Sapper & Diesel-dorff, translated by Charles P. Bowditch, Washington, Government Printing Office, 1904, pp. 681.
- Smithsonian Institution, *Twenty-third Annual Report, with Accompanying Paper on the Zuñi Indians, Their Mythology, Esoteric Fraternities, and Ceremonies*, by Matilda Coxé Stevenson, Washington, 1904, pp. xlv, 634.
- Smithsonian Institution, *Haida Texts and Myths, Skidegate Dialect*, recorded by John R. Swanton, Washington, 1905, pp. 448.
- Annual Report of the Board of Regents of the Smithsonian Institution, *Operations, Expenditures and Condition of the Institution for year ending June 30, 1904*, Washington, 1905, pp. lxxix, 804.
- Alfred Binet, *L'âme et le Corps*, Paris, Flammarion, 1905, pp. 288.
- Alfred Fouillée, *Les éléments sociologiques de la morale*, Paris, Alcan, 1905, pp. xii, 379.
- Alfred Fouillée, *Esquisse psychologique des peuples européens*, 3me. ed., Paris, Alcan, 1903, pp. xix, 550.
- Eugenio Rignano, *Sur la transmissibilité des caractères acquis, hypothèse d'une centro-épigénèse*, Paris, Alcan, 1906, pp. 320.
- Beha-Ullah, *Les préceptes du Béhaïsme traduit du persan par Hippolyte Dreyfus et Mirza Habib-Ullah Chirazi*, Paris, E. Leroux, 1906, pp. x, 72.
- Paul Hermant, *Les Mystiques, étude psychologique et sociale (extrait de la revue de Synthèse Historique)*, Paris, Leopold Cerf, 1905, pp. 62.
- Rudolf Goldscheid, *Grundlinien zu einer Kritik der Willenskraft, Willens-theoretische Betrachtung des biologischen, ökonomischen und sozialen Evolutionismus*, Wien und Leipzig, W. Braunnüller, 1905, pp. 193.
- Hans Raeder, *Platons philosophische Entwicklung, Von der königlich Danischen Gesellschaft der Wissenschaften gekrönte Preisschrift*, Leipzig, Teubner, 1905, pp. 435.
- Ernst Schaumkell, *Geschichte der deutschen Kulturgeschichtsschreibung von der Mitte des 18 J. H. bis zur Romantik im Zusammenhang mit der allgemeinen Entwicklung, Preisschrift gekrönt und herausgegeben von der Fürstlich Jablonowski'schen Gesellschaft zu Leipzig*, Leipzig, Teubner, 1903, pp. 320.
- Guglielmo Salvadori, *Das Naturrecht und der Entwicklungsgedanke, Einleitung zu einer positiven Begründung der Rechtsphilosophie*, Leipzig, Dieterich'sche Verlagsbhdg., 1905, pp. viii, 108.
- A. Meinong, *Über die Erfahrungsgrundlagen unseres Wissens, Abhandlungen zur Didaktik und Philosophie der Naturwissenschaft*, Band I., Heft 6, Berlin, J. Spranger, 1906, pp. 113.
- Ludwig Goldschmidt, *Kants "Privatmeinungen" über das Jenseits, und die Kant Ausgabe der königl. preuss. Akademie der Wissenschaften, ein Protest*, Gotha, Thienemann, 1905, pp. 104.
- Hermann Graf Keyserling, *das Gefüge der Welt, Versuch einer kritischen Philosophie*, München, Bruckmann, 1906, pp. viii, 382.
- K. R. Brotherus, *Immanuel Kants Philosophie der Geschichte*, Helsingfors, 1905, pp. 136.
- Paul Schultz, *Gehirn und Seele*, Leipzig, Barth, 1906, pp. viii, 189.
- Joseph Mack, *Kritik der Freiheitstheorien, eine Abhandlung über das Problem der Willensfreiheit*, Leipzig, J. A. Barth, 1906, viii, 287.
- Marino Calderoni, *Disarmonie Economica e Disarmonie Morali (saggio di un'estensione della Teoria Ricardiana della Rendita)*, Firenze, Fr. Lumachi, 1906, pp. 120.
- G. Fanciulli, *La Coscienza Estetica*, Torino, Fr. Bocca, 1906, pp. 319.

VIII.—PHILOSOPHICAL PERIODICALS.

PHILOSOPHICAL REVIEW. Vol. xv., No. 1. **W. Fite.** 'The Experience-Philosophy.' [The fundamental proposition of the experience-philosophy (that experience and it alone is 'given' or 'immediately given') is its fundamental error: the thing in space and time is as good a datum as experience; neither is an absolute datum; and the search for absolute data is illusory and logically unnecessary.] **G. H. Sabine.** 'Hume's Contribution to the Historical Method.' [Any theory tending to the recognition of the intimacy of the social relation is also indirectly a contribution to the growth of the historical method. Here Hume's merit is unmistakable: his view of the social nature of the individual and of the organic structure of society is far more adequate than that of the bulk of his contemporaries. His direct contribution is, naturally, less clear; though he did good service by directing attention, in his *History*, chiefly toward manners and customs.] **W. B. Pitkin.** 'The Self-Transcendency of Knowledge.' [A plea for differentiation of terms. The self-transcendency of knowledge is used at present to mean the onflowing of experience towards an unknown; the experiencing of things not 'here,' *i.e.*, temporally or spatially remote; the non-deducible character of the order and way in which new contents appear; the excess of meaning over process; the representative or symbolical function of experience; the superiority of concept to percept.] Discussion. **A. C. Armstrong.** 'Herder and Fiske on the Prolongation of Infancy.' [Herder anticipated Fiske; but there is no evidence of conscious derivation or even of unrealised indebtedness.] Reviews of Books. Notices of New Books. Summaries of Articles. Notes. Vol. xv., No. 2. **J. Dewey.** 'Beliefs and Realities.' [The writer first outlines the conception of the 'common man,' that beliefs are real, and manifest their reality in the usual way, by modifying and shaping the reality of other real things. He then sketches the history of thought, showing how beliefs have been subjected to preconceived notions of knowledge and of reality as its monopolistic possession. Thirdly, he traces some of the *motifs* which make for reconsideration of the supposed uniquely exclusive relation of logical knowledge and reality. Finally, he seeks to prove that the pragmatic point of view unites the fullest acknowledgment of moral powers and demands with thoroughgoing naturalism.] **F. Thilly.** 'Psychology, Natural Science, and Philosophy.' [Rejects various arguments in favour of making psychology a natural science: that mind may be studied in connexion with matter, that the mental series of itself does not form a continuous line, that psychology employs scientific arguments. On the other hand, psychology is indispensable to philosophical studies, while there is no absolutely presuppositionless psychology.] **H. H. Bawden.** 'Evolution and the Absolute.' [The ideas of unity (conservation) and continuity (evolution) are true only when each is interpreted in terms of the other. Reality or experience is conceived as absolutely conserved or as an evolution in time according to the demands of the

specific and concrete situation. Criticism of Spencer, Bradley, and Royce.] **J. G. Hibben.** 'Proceedings of the American Philosophical Association: the fifth annual meeting, Emerson Hall, Harvard University, Cambridge, Mass., 27th to 29th December, 1905.' Discussion. **A. W. Moore.** 'Experience and Subjectivism.' [Reply to Fite.] Reviews of Books. Notices of New Books. Summaries of Articles. Notes.

PSYCHOLOGICAL REVIEW. Vol. xiii., No. 1. **W. A. Hammond.** 'The Relations of Logic to Allied Disciplines.' [Historical sketch of the growth of logic as formal, metaphysical, and epistemological and methodological. Special problems: (1) Logic as science and as art. "It is the descriptive and explanatory aspect of logic that constitutes its scientific character, while it is the specific normative aspect that constitutes its logical character. . . . The actual methodology of the sciences is logic as art." (2) Logic and psychology are coordinate. (3) Logic is purely a science of evidential values, not a science of content, as are the natural sciences and metaphysics.] **W. R. Wright.** 'Some Effects of Incentives on Work and Fatigue.' [Ergographical experiments. More work is done when a task is set than when no definite aim is proposed. Known inability to fulfil prescribed conditions decreases the total work. Fatigue is less when a task is set, though the output of work is greater.] Discussion. **I. King.** 'The Problem of the Subconscious.' [The subconscious is not dim consciousness; not something psychic, but not self-conscious; it is rather a mass of physical (neural) dispositions, tensions, actual processes, which are in some degree organised,—the remnants of habits and experiences which have either lapsed from consciousness or have never penetrated to the central plexus.] **J. B. Pratt.** 'The Place and Value of the Marginal Region in Psychic Life.' [Ideation and sensation are small islands, bathed in the sea of vital feeling. This sea extends from the subconscious up to maximal differentiation, and is in a state of spontaneous turmoil, constantly throwing up products of all sorts on the shores of the clearer consciousness. It represents the primary form of consciousness; gives value to life; determines character and personality.]

AMERICAN JOURNAL OF PSYCHOLOGY. Vol. xvii., No. 1. **C. E. Browne.** 'The Psychology of the Simple Arithmetical Processes: a Study of Certain Habits of Attention and Association.' [A study of the processes involved in addition, multiplication, subtraction, and division, both as written exercises and as mental arithmetic. As the title shows, the author lays chief emphasis upon the functions of association and of selective attention, though full introspective reports of imagery, feelings, etc., are included. In many cases the analysis can only be regarded as preliminary; but the report is so detailed that future work may begin where the present study leaves off.] **S. I. Franz.** 'The Time of Some Mental Processes in the Retardation and Excitement of Insanity.' [Experiments on rate of tapping, simple and compound reactions, adding, discriminating and marking letters, etc. Excited patients show no consistent increase of speed as compared with normal or depressed patients: the maniacal condition is one of increased motor diffusion, not of increased motor ability. Retarded patients are slow at the beginning of all series, but the retardation is not regular. Retarded patients are susceptible to practice. Only in a few cases are the average variations greater for the insane than for normal subjects.] **A. F. Chamberlain.** 'Acquisition of Written Language by Primitive Peoples.' [A summary of what is known of the attempts of missionaries and others to enable certain American Indian peoples to read and write their own tongues.] **C. E. Ferree.**

'An Experimental Examination of the Phenomena usually attributed to Fluctuation of Attention.' [Liminal pressure and electro-cutaneous stimuli give no fluctuation. The intermittences of sensation resulting from minimal visual stimuli or stimulus-differences are explained as adaptation phenomena somewhat obscured by the special conditions. Adaptation is in itself a continuous phenomenon, but its continuity is interfered with by eye-movements, blinking, etc. The theory is supported by a wide range of observations, and by elaborate experiments with variation of intensity and area of the stimuli.] **M. F. Washburn.** 'Minor Studies from the Psychological Laboratory of Vassar College.' (II.) **A. Bell** and **L. Muckenhoupt.** 'A Comparison of Methods for the Determination of the Ideational Type.' [A test of the mutual consistency of the methods given in Titchener's *Exper. Psychol.*, I., ii. General agreement is found; though the writers insist on the importance of distinguishing vividness and frequency of imagery.] **C. H. Town.** 'The Kinaesthetic Element in Endophasia and Auditory Hallucination.' [Report of eight cases, illustrating the different varieties of internal speech, isolated and not inhibited.] **C. H. Town.** 'The Negative Aspect of Hallucinations.' [Hallucination is based not upon dissociation but upon a narrowing of the field of Attention.] Literature. Notes and News.

THE BRITISH JOURNAL OF PSYCHOLOGY. Vol. i., Part 4. October, 1905. **W. H. R. Rivers.** 'Observations on the Senses of the Todas.' [Results of an examination of the Todas in Southern India by means of visual, tactile, and olfactory tests. The value of these results is increased by comparison with those obtained from various other civilised and un-civilised races.] **Charles S. Myers.** 'A Study of Rhythm in Primitive Music.' [An analysis of the complex combinations of rhythms found in the music of the Malays of Sarawak, and showing that, whereas modern music has developed complexities of harmony, primitive music is characterised by complexity of rhythm and rests on the possibility of apprehending 'relatively long periods filled with measures of diverse length . . . as an organic whole or "phrase"'.] **James Ward.** 'Is "Black" a Sensation?' [An examination of the facts, as well as of the various Revises of Helmholtz, Hering, Wundt, and S. E. Müller, makes it probable that black is not a positive sensation.] **W. M'Dougall.** 'The Illusion of the "Fluttering Heart" and the Visual Functions of the Rods of the Retina.' [The term 'fluttering heart' covers two different illusions, which ought to be distinguished. One of these illusions is observed in bright light only, and its explanation is physical, *viz.*, difference in the refrangibility of the light-rays employed. The other illusion is observed in dim light only, and with dark-adapted eye, and must be explained with Von Kries as due to the fact that the rods respond to stimulation more slowly than the cones. This supports the theory that the rods are a special apparatus for vision in dim light, and if so, it is an argument in favour of Helmholtz as against Hering's Theory of Vision.] **W. M'Dougall.** 'On a New Method for the Study of Concurrent Mental Operations and of Mental Fatigue.' [Description of an apparatus securing uninterrupted attention to one process and recording at the same time the effects of the interference of a second process of attention.] Proceedings of the Psychological Society.

THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS. II. 23. **Kate Gordon.** 'The Relation of Feeling to Discrimination and Conception.' [Feeling is pure quality and homogeneous.] **I. King.** 'The Real and the Pseudo-psychology of Religion.' [Criticism of Stoops:] II. 19. For psychology religion consists of 'value attitudes'.] **W. P.**

Montague. 'Panpsychism and Monism.' [Strong's theory is a 'Darwinization of Berkeley,' but insufficient.] **P. Hughes.** 'Dr. Bush's Definition of Consciousness': [II. 21.] II. 24. **Kate Gordon.** 'Feeling and Conception.' ['To point out the intimacy of the way in which feeling influences thought.'] **W. S. Monroe.** 'Mental Elements of Dreams.' [Questionnaire results.] **J. Dewey.** 'The Knowledge Experience and its Relationships.' ["Validity is not definable or measurable in terms of the knowledge content if isolated, but only of the *function* of the knowledge experience in subsequent experiences," while "needs are not met more or less usefully; they are met more or less successfully, and the successful fulfilment defines the useful thing of the situation."] **B. H. Bode.** 'Cognitive Experience and its Object.' [Discusses Dewey: II. 15.] II. 25. **F. Arnold.** 'Association and Atomism.' [Association should be considered as functional, not atomistic, and appreciated as it is.] **L. P. Boggs.** 'The Psychical Complex called an Interest.' ["An interest is a self in that it is the whole of consciousness, but the idea of self is conspicuous by its absence."] **C. M. Bakewell.** 'The Issue between Idealism and Immediate Empiricism.' [Questions Dewey's use of 'immediate' in II. 22.] II. 26. **F. C. French.** 'The Relation of Psychology to the Philosophy of Religion.' [Criticises James, because 'subjective miracle is quite as impossible as objective miracle,' but rests on the assumption that if religious experiences have cognitive value their object must be 'supernatural'.] **J. Dewey.** 'The Knowledge Experience Again.' [Reply to Bode and Bakewell: II. 24, 25. "Even the distinctively logical experience is still always *in toto* an immediate experience."] **W. H. Sheldon.** 'Universals: a Reply' [to Pitkin: II. 22]. III. 1. **W. E. Hocking.** 'The Transcendence of Knowledge.' ["This world beyond is not a fixed order: these kinds of experience seem to a certain extent to play the rôle of world beyond for each other, so that cognitive experience is known by value experience, and value experience in turn by cognition."] **I. A. Leighton.** 'Psychology, and the Logical Judgment with Reference to Realism.' ["The reality of abstract truths is a thought-reality, but not a mere psychological existence."] New York Academy of Science (Report). There is also an interesting review of a book by Schultz arguing that the Greeks were blue-yellow colour blind. III. 2. **H. R. Marshall.** 'The Nature of Feeling.' [Distinguishes five senses of the term and derives them from a common 'subjectiveness'.] **J. Dewey.** 'The Terms Conscious and Consciousness.' [Discusses six senses of the term.] Discussions. **P. Hughes, W. T. Bush, J. B. Miner.** III. 3. **H. N. Gardiner.** 'The Definition of Feeling.' [A feeling is any content of consciousness regarded as the immediate present modification of an individual experience.] **M. F. Washburn.** 'The Term "Feeling".' **H. Nicholas.** 'Professor James's "Hole".' [The notion of 'continuous transitions' in 'pure experience' does not effect a transition from a solipsistic to a 'common' experience.] Meeting of the American Philosophical Association. III. 4. **F. C. S. Schiller.** 'Is Absolute Idealism Solipsistic?' [A paper that should provoke a good deal of discussion and disclaimer. It "contains implications which reduce it to a choice between solipsism and suicide," and concludes that "possibly neither philosophy nor theology would suffer irreparable loss by the self-elimination of absolute idealism."] **E. Tausch.** 'The Interpretation of a System from the Point of View of Developmental Psychology.' [A typical instance of the cumbrous titles which are allowed to disfigure this 'Journal'. The paper is really a criticism of an amateur philosopher named C. K. Franklin.] **J. W. Baird.** 'A Reply to Dr. Miner.' [Cf. III. 2.]

REVUE NÉO-SCOLASTIQUE. Février, 1905. **L. Noël**. 'The Principle of Determinism.' [Determinism rests on abstractions: all spontaneity, all liberty, is shut out from the abstract ground to which science has chosen to confine herself.] **E. van Roey**. 'Money according to St. Thomas Aquinas.' **H. Guyot**. 'The Generation of Intelligence by the One according to Plotinus.' [Plotinus attempts an untenable *via media* between pantheism and creationism.] **D. Nys**. 'Cosmological Theories.' Review of **F. Brunetière's** 'Utilisation of Positivism' (for proof of Christianity). Mai, 1905. **L. Noël**. 'The Principle of Determinism.' **C. Piat**. 'God according to Plato.' [A world-soul, ruled by the vision of the Good, forming and upholding nature.] **E. van Roey**. 'St. Thomas's View of Money.' **E. Legrand** replies to an article by **M. Paulhan** in the *Revue Philosophique* on the 'Immortality of Art'. **Mgr. Battifol** is quoted as calling Leo XIII's Encyclical on the study of St. Thomas (*Aeterni Patris*, 4th August, 1879) "a declaration of the rights of pure reason" against the current philosophies of Traditionalism, Idealism, Positivism, and Immanence. **Mgr. Battifol** further says, "Scholasticism ought to apply itself to the study of natural science, without which all notion of life or soul becomes an *a priori* speculation that can no longer take hold on men's minds". Août, 1905. **J. Cevolani**. 'Can any Conclusion Follow from Two Negative Premises?' [Against Rosmini.] **C. Piat**. 'God According to Plato.' **D. Nys**. 'Cosmological Theories.' **D. Mercier**. 'The Tendency of Scholasticism.' [Founded on experience of the University of Louvain. Lectures should be in French, with some repetition in Latin. Order of subjects: Logic as an art merely, Cosmology, Psychology, Metaphysics, Natural Theology, Science of Logic, Moral and Political Philosophy, History of Philosophy.] Novembre, 1905. **S. Deploige**. 'The Conflict of Moral Science with Sociology.' [Whether Ethics are a normative science.] **E. Janssens**. 'A Problem in Pascal.' [Can the *Pensées* be re-arranged into a complete Apology for Christianity, or is it impossible "de refaire une oeuvre qui d'ailleurs ne fut jamais faite"?] **F. v. Canwelaert**. 'Contemporary Theories of the Relation of Soul and Body.' **C. Sentroul** and **J. Cevolani**. [Further discussion on the rule that two negative premises yield no conclusion.]

REVUE DE PHILOSOPHIE. 1^{er} Décembre, 1905. **M. Sérol**. 'Analysis of Attention.' ["Attention, especially internal attention or reflexion, is truly the most human form of our activity; all our powers labour thereat under the authority of the master faculties; hence it may be said that the education of man has no other aim than the triumph of attentive and reflective activity over the brute automatism of images and passions; which shows the advantage that pedagogy may draw from the psychology of attention."] **C. Boncaud**. 'Personal Initiative and Social Authority, an Outline of Juridical Philosophy.' **Dr. de Buck**. 'The Associationist versus the Intellectualist Theory in Mental Pathology.' ["Objectively, biologically speaking, and not on mere grounds of internal observation, we are led to admit in man an organ of apperception."] **N. Vaschide**. 'Human Personality.' [A long and laudatory analysis of the late Mr. Myers's work, which is being translated into French.] 1^{er} Février, 1906. **A. Sertillanges**. 'Agnosticism or Anthropomorphism?' [The question is, what we can know of God—nothing at all or merely a magnified humanity? Both alternatives are rejected according to the teaching of St. Thomas.] **L. Baille**. 'Genesis of First Principles.' ["Why does the principle of contradiction assume a complex form?"] **M. Gossard**. 'Outlines of a Scholastic Synthesis of Morals.' [A highly luminous and suggestive essay on the teleology of the universe.] **J. Gardavi** and **A. Charousset**. 'The Formation of Ideas.' [Further defence of *intellectus agens*.]

REVUE PHILOSOPHIQUE DE LA FRANCE ET DE L'ÉTRANGER. 30^e Année, No. 12, Décembre, 1905. **G. Dumas.** 'Le Préjugé intellectualiste et le Préjugé finaliste dans les théories de l'expression.' [The expression of our various sentiments is essentially a biological fact and can be explained by the variations of the muscular tonus and innervation in a very much clearer and simpler way than through psychology. M. Dumas criticises two main tendencies in the theory of expression, *i.e.*, the finalist tendency as represented by Darwin, and the intellectualist one as represented by Wundt. Opposed to both, he holds he has succeeded in explaining clinically and experimentally, from the physiological point of view, the expression of joy, of sadness, of anger, and of fear.] **H. Luquet.** 'Réflexion et Introspection.' [In psychology the aim of reflective consciousness is to discover the identical under the diverse: it endeavours to form a scientific representation of the inner world, copied from that of the external world, and this kind of artificial knowledge is intended to serve practical purposes, as it does in objective sciences. Introspection, on the contrary, is disinterested, and its aim is to find again the differences under the common characters, to reach the immediate data of consciousness in their original fluency, spontaneity, and purity. Its nature is æsthetic rather than scientific. Science substitutes symbols for the datum; art alone tries to apprehend it in its reality for us. Reflective or scientific psychology is incomplete and therefore false, and must needs be completed by the introspective psychology. A valuable contribution to the study of method in psychology.] **G. Revault d'Allonnes.** 'Rôle des sensations internes dans les émotions et dans la perception de la durée.' [An instructive account of observations methodically pursued on an inmate of St. Anne's Asylum in Paris, who presents, along with a visceral anaesthesia, a total loss of the emotions. The author summarises the main results of his careful study in the following psychological and philosophical conclusions: Visceral sensations are the essential element in emotions. The feeling of concrete duration is nothing else but visceral sensibility. "La durée viscérale" is to be distinguished from "le temps intellectuel infini" and from "la durée sensori-motrice". Inclination is possible without any emotion whatever. The state of pure rationality, *i.e.*, the activity directed by categorical imperatives void of emotion, is not a superior mental state, but a pathological one.] **Dr. E. Jardieu.** 'La Haine: étude psychologique.' [A descriptive analysis of the nature of hate and of its various manifestations. In the last paragraphs of the paper the writer makes an attempt, not without self-contradiction, to assign a value to hate, and to maintain its "rights".] Analyses et comptes rendus. *Revue des Périodiques étrangers.* Table des matières du tome lx. Trente et unième année. No. 1. Janvier, 1906. **B. Bourdon.** 'L'Effort.' [In this short article, mainly polemical, the writer discusses Goldscheider's theory of the perception of physiological effort, and rejects altogether, first, the doctrine of William James and of other psychologists according to which there exists a purely moral or mental effort, essentially distinct from the muscular one, and secondly, the hypothesis which presents the sensation of resistance as the ultimate basis of our notion of an external world.] **Dr. J. Rogues de Fursac.** 'L'Avarice: essai de psychologie morbide' (1^{er} article). [First part of a very instructive study, based on clinical observations, on avarice. The elementary functions of knowledge (perception, memory, and association of representations), its complex manifestations (imagination, judgment, general notions), and the atrophy of altruistic feelings, as they appear in this "distinctly morbid passion," are carefully and clearly described and analysed by a physician who is also a psychologist.] **G. Prevost.** 'La Religion du doute.'

[Doubt about all the revealed religions is the main characteristic of our time. But is it not possible to lay on this very doubt the foundation of a kind of religion which would not abolish the positive religions, but rather include them and even lead to higher moral consequences? M. G. Prevost undertakes this task and delineates what he calls the religion of doubt. His leading ideas, in which the reader will recognise both a very old doctrine of a noble inspiration, and an uncritical attitude of mind, are the following: God should be conceived as the necessary ground of all, and the unknowable Infinite. The existence of the human soul has had no beginning and shall have no end; we have lived anterior lives of which we have vague reminiscences, and in the continuity of its future lives the soul will probably pass, by personal, intellectual and moral endeavour, into more perfect states. The modern ideas of evolution and the recent theory of matter are advocated by the author as confirmative of his general views. Meanwhile, certainty in the knowledge of our destiny would eradicate in man the desire and the merit of action: doubt is the greatest gift for mankind. The author holds it possible to build up on the basis of his principles an ethics of a practical and very high character which shall afford an adequate sanction to our sentiment of justice.] *Revue Générale: G. Richard.* 'La Philosophie du droit au point de vue sociologique.' [A critical review of nine books recently published—five of them in Italy—treating of the philosophy of law.] 'Analyses et Comptes-rendus.' *Revue des Périodiques étrangers* [A review of *MIND*, 1905, January-October].

ARCHIVES DE PSYCHOLOGIE. Tome v., No. 2. **A. Lemaître.** 'Fritz-Algar: histoire et guérison d'un désordre cérébral précoce.' [Account of a case of hysteria (nightmares, autoscopie hallucinations, soliloquies) in a youth of fifteen; treatment and cure by suggestive reintegration of dissociation.] **W. de Bechterew.** 'Des signes objectifs de la suggestion pendant le sommeil hypnotique.' [Many suggestions, given in the hypnotic state, and apparently accepted by the subject, are not actually realised. It is therefore important to possess objective (physiological) means of control. The writer gives a list of such objective tests.] **W. de Bechterew.** 'Nouvel appareil pour l'examen de la perception acoustique.' [Description of an acoumeter, of the type of Zoth's and Lehmann's.] **P. Cérésole.** 'Le parallélisme psycho-physiologique et l'argument de M. Bergson.' [To refute parallelism by M. Bergson's argument, one must show that as a matter of fact the external world may be modified without modification of the nervous system. Comparison of determinism and parallelism, as similar theories applied respectively to time and to space.] **E. Claparède.** 'L'Aggrandissement et la proximité apparents de la lune à l'horizon.' [Review of theories: new observations. We overestimate the moon on the horizon because we take it for a terrestrial object. We do this partly because of its situation in space, partly because its colour changes prevent or hinder recognition and identification. Further, we overestimate it for affective reasons, on account of our interest in terrestrial objects.] *Recueil de faits: Documents et Discussions.* **M. Roch.** 'Note sur les prévisions de rencontre.' [Our thinking of people just before we meet them may be due to suggestion from familiar localities, to actual (but subconscious) recognition at a distance, or to simple coincidence. There is no need to invoke telepathy, etc.] **A. Elmer.** 'Vme Conférence suisse pour l'éducation des anormaux, St. Gall, 1905.' **T. Jonckheere.** 'La II^{me} conférence belge pour l'amélioration du sort de l'enfance anormale.' *Bibliographie. Notes diverses.*

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE. Bd. xi., Heft 3. **R. Saxinger.** 'Beiträge zur Lehre von der emotionalen Phantasie.' [Elsenhans's generalisation and Ribot's abstraction of feeling have reference to the same emotional phenomenon, but to this phenomenon as observed in different contexts. The 'abstract' feelings are feelings of imagination, attaching directly to substrate-ideas. This direct attachment must be explained from specific dispositions to feelings of imagination, actualised by the substrate-ideas. Desires of imagination differ from real desires in that they do not cease with the fulfilment of the imagination.] **S. Loria.** 'Untersuchungen über das Peripherie Sehen; ein Beitrag zur Psychologie der Aufmerksamkeit.' [Extension of Heinrich's work on the changes of accommodation in peripheral vision. The accommodative adjustment of the eye to paraxial distances is determined unequivocally by the position of the object, *i.e.*, is independent of the distance of the fixation point; the eye is paraxially strongly myopic, the myopia increasing with the angle of paraxial presentation; the breadth of accommodation decreases with the angle of paraxial presentation, etc. The results are turned to account for the theory of attention and of range of consciousness.] **W. Lohmann.** 'Ueber den Wettstreit des Sehfelder und seine Bedeutung für das plastische Sehen.' [Consideration of the presence of rivalry in everyday life, and of the differences in this regard between central and peripheral vision, lead to the conclusion that the main condition of plastic vision is the (ordinarily unconscious) rivalry of the two monocular fields and the consequent apparent parallax of the objects lying before and behind the point of fixation.] Literaturbericht. Bd. xxxix., Heft 1 and 2. **W. Weygandt.** 'Experimentelle Beiträge zur Psychologie des Schlafes.' [For such easy and customary work as addition, a half-hour sleep period gives complete recuperation. For more difficult work (memorising), a longer period is required; the recuperation being, on the whole, proportional to the length of the sleep.] **H. Giering.** 'Das Augenmass bei Schulkindern.' [Estimation of visual extents does not improve during the school years; oftentimes does not improve from the age of three onwards. Children from six years of age are, on the whole, subject to the same plane illusions as adults. In the absence of secondary criteria, children do not perceive monocularly differences of extent in the third dimension.] **W. Nagel** and **H. Piper.** 'Ueber die Bleichung des Sehpurpurs durch Lichter verschiedener Wellenlänge.' [Frog and owl retinas bleach out in the same way, no matter what the colour of the bleaching light may be. The result tells against Kühne's hypothesis of a visual yellow.] **W. Nagel.** 'Dichromatische Fovea, trichromatische Peripherie.' [Case of central Deuteranopia (so-called green blindness), with normal periphery. The subject had passed various railway tests.] **A. E. Fick.** 'Ueber die Verlegung der Netzhautbilder nach aussen.' [The projection of a single bright point in a dark field of vision is extraordinarily inaccurate.] Besprechungen. Literaturbericht. Bd. xxxix., Heft 3. **K. Heilbronner.** 'Zur Frage der motorischen Asymbolie (Apraxie).' [Discussion of cases (symptoms, aetiology, classification), with special reference to the work of Meynert and Siepmann.] **G. Alexander-Schaefer.** 'Zur Frage der Beeinflussung des Gedächtnisses durch Tuschreize.' [The primary memory image is always affected by a strong intercurrent sensory stimulus; secondary images are not changed if they are stable and of long standing. Habituation frees the memory image, but cannot suppress the motor reaction.] Literaturbericht. Bd. xxxix., Heft 4 and 5. **C. Stumpf.** 'Ueber zusammengesetzte Wellenformen: mit 2 Figurentafeln von K. L. und M. Schaefer.' [Discussion of figures, with hints of possible applications to the facts of audition.] **C. Stumpf.** 'Differ-

enztöne und Konsonanz.' [Critique of F. Krueger.] **R. P. Angier** and **W. Trendelenburg**. 'Bestimmungen über das Mengenverhältnis komplementärer Spektralfarben Weissmischungen.' **C. M. Geissler**. 'Das Ich im Traume, nebst einer kritischen Beleuchtung der Ich-Kontroverse.' [Discusses, with constant reference to the writer's previous works, the dream-processes of condensation, schematisation, and endophasia (all interpreted as means to the enhancement of mental energy); the gradual emergence of the bodily self in dreams from a feeling of centromotor regulation; the formal and material contents of the dream-self, etc. Epistemologically the author sides with Avenarius and Schuppe as against Ziehen, making the feeling of motor regulation the essential constituent of the self.] **G. Revesz**. 'Wird die Lichtempfindlichkeit eines Auges durch gleichzeitige Lichtreizung des andern Auges verändert?' [Experiment shows that there is no uniform change.] **R. Stigler**. 'Beiträge zur Kenntnis von der entoptischen Wahrnehmung der Netzhautgefäße.' [Describes some new and simple methods of observation.] **R. Stigler**. 'Eine neue subjektive Gesichterscheinung.' [Projection of a polygonal network of silvery white lines.] Literaturbericht. Bd. xxxix., Heft 6. **W. Peters**. 'Aufmerksamkeit und Zeitverschiebung in der Auffassung disparater Sinnesreize.' [Repetition and extension of Exner's experiments, with and without special direction of attention. Explanation in terms of inhibition and facilitation, with emphasis on motor adaptation as a feature of the attentive state.] **R. P. Angier**. 'Die Schätzung von Bewegungsgrößen bei Vorderarmbewegungen.' [Under the conditions, accuracy of spatial estimation is independent of position and resistance or muscular tension, but dependent on rate of movement, whether active or passive. Explanation in terms of articular sensations.] **C. E. Seashore**. 'Die Aufmerksamkeitsschwankungen.' [Critique of Hamner.] Literaturbericht. Bd. xl., Heft 1 and 2. **A. Marty**. 'Ueber Annahmen.' [Maintains that Brentano's division of primary mental functions into ideation, judgment, and interest is adequate, as against Meinong's view that assumptions form a class of functions lying midway between those of ideation and judgment. Detailed criticism of Meinong's work.] **G. Alexander-Schaefer**. 'Zur Frage Über den zeitlichen Verlauf des Gedächtnisbildes für verschiedene Sinnesreize.' [Repetition and extension of Paneth's work, with visual, auditory, and tactual stimuli. No attempt at analysis.] **A. Mueller**. 'Ueber den Einfluss der Blickrichtung auf die Gestalt des Himmelsgewölbes.' [Critique of Reimann and Deichmüller; new observations. The chief factor in the illusion of the form of the arch of the sky is, not atmosphere, but direction of regard; though this is not, or not always, the main factor in the illusion of the greater size of the heavenly bodies on the horizon. The influence of colour on the whole group of illusions deserve study.] Literaturbericht. **W. Stern**. 'Kindespsychologie und Pädagogik.—II.' Bd. xl., Heft 4. **C. O. Taylor**. 'Ueber das Verstehen von Worten und Sätzen.' [Experiments on the 'understanding' of language, heard or read; dictation of simple problems, reading-to-oneself of paragraphs, abstract and concrete, listening to poetry, etc. Results: the understanding of concrete passages may be assisted by the rise of images, though these become fewer as the text becomes familiar; that of abstract passages is rather hindered by such images; the conscious attitude of 'understanding' becomes less apparent the more familiar the material; etc.] **G. H. Schneider**. 'Die Orientierung der Brieftauben.' [Report of elaborate experiments. The birds are attracted by valleys and by clumps of houses; difference between young and old birds; specimen paths for different distances; meaning of training to a certain direction. Explanation throughout in terms of perpetual im-

pulse : there is no innate sense of direction, no reflexion or purposive choice.] Literaturbericht. **W. Peters.** 'Erwiderung'. [Reply to Piper.] Bd. xl., Heft 5 und 6. Literaturbericht. **K. L. Schaefer,** mit Unterstützung von **H. C. Warren.** 'Bibliographie der psycho-physiologischen literatur des Jahres 1904.' [2,463 titles, as against 2,575 of the same bibliography for 1903, and 3,445 of the *Psychological Index* for 1904.]

ARCHIV FÜR DIE GESAMMTE PSYCHOLOGIE. Bd. vi., Heft 3. **W. Ament.** 'Ein Fall von Ueberlegung beim Hund?' [Case of supposed reflection on the ground of general experience (licking frost off a window pane) in a dog.] **J. Segal.** 'Die Bewusste Selbsttäuschung als Kern des ästhetischen Genießens : eine kritische Betrachtung.' [Critique of Conrad. (1) *Methodological.* Two experiences which have opposite names (*e.g.*, agreeableness and disagreeableness) need not consist of precisely opposite mental contents ; and to explain æsthetic pleasure we must have recourse, not to a single complex and unanalysed process, but to the elementary processes into which by analysis the total attitude may be resolved. (2) *Psychological.* As a matter of fact, we have no consciousness of self-illusion in æsthetic contemplation ; moreover, it is not true that the greater the illusion the greater is the æsthetic pleasure.] **E. Duerr.** 'Zur Frage der Wertbestimmung.' [Critique of Kreibitz, Meinong, von Ehrenfeir, Cohn. "Wert ist jede Lust und alles, worauf unsere Lustgefühle sich beziehen in der eigenartigen Weise, die wir meinen, wenn wir von einer Richtung des Gefühls auf Objekte sprechen." Five types of this reference are provisionally distinguished.] **F. Kiesow.** 'Ueber einige geometrischoptische Täuschungen.' [Notes on some rectilinear illusions of variable extent, which are made to lead up to the Müller-Lyer illusion. Contrast and perspective are subordinate moments ; the explanation must be sought pre-eminently in the motor mechanism of the eye.] **L. Botti.** 'Ein Beitrag zur Kenntnis der variablen geometrisch-optischen Streckentäuschungen.' [A parallel investigation to that of the previous paper, dealing with divided lines, filled an empty space, filled rectangles, etc. Same conclusion as before.] **G. Stoerring.** 'Experimentelle Beiträge zur Lehre vom Gefühl.' [(1) Distinction of sensory pleasantness and pleasantness of mood or disposition : the former attaches to the stimulus complex (taste), the latter spreads over the whole consciousness ; the former is attended by quickening, the latter by slowing of respiration. (2) Pneumographic curves of unpleasantness are distinguished by diminution of the average value of the quotient obtained by dividing length of inspiration by length of expiration. (3) Dynamometrical experiments, aimed to trace the relation between feeling and external voluntary action, show that unpleasant feelings may be a direct motive to action.] **F. Kiesow.** 'Ueber sogenannte "frei steigende" Vorstellungen und plötzlich auftretende Aenderungen des Gemütszustandes. Sind die Verbindungsglieder, welche hierbei in Frage kommen, unbewusst oder unbemerkt?' [Concludes that there is, in all probability, no reproduction without association ; that sudden changes of mood are also mentally motivated ; and that the connecting links are unremarked or unnoticed, not unconscious. An interesting and valuable paper ; but written with a triviality of circumstance that renders it unnecessarily long.] **W. Ament.** 'Das Projekt eines Kongresses für Kinderkunde, Kindererziehung und Jugendfürsorge.' Referate.

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. Neue Folge, Bd. xi., Heft 4. 25th November, 1905. **H. Leser.** 'Über die Möglichkeit der

Betrachtung von unten und von oben in der Kulturphilosophie' (Schluss). [Concludes very much in the spirit of Eucken. Naturalistic methods based on a spiritual principle ultimately reduced to mere appearance; whereas a more philosophical investigation disentangles the spiritual life from the empirical and sensuous and shows that it is a living, independent reality. It functions and preserves itself in experience giving that its meaning and drawing it over to itself. The *Reich ideeler Größen* not merely existing in reflexion, but an actual and increasingly conscious power in the governing of life. In dealing with logic, ethics and religion we have nothing to do with a naturalistic *Betrachtung von unten*, but grasp teleological necessities deriving from a triumphant spiritual reality.] **D. Adolf Müller.** 'Quellen und Ziele sittlicher Entwicklung' (Schluss). [Deals with the question of evil and the problem of development.] **Dr. Ernst Schwarz.** 'Über Phantasiegefühle.' [These not identical with weak serious-feelings, but qualitatively different. Wundt is wrong in holding that they precede the imaginary presentation: they are rather coincident with it. They do not, like weak feelings, have the power of strengthening dispositions of feeling.] **Anna Tumarkin.** 'Bericht über die deutsche ästhetische Literatur aus den Jahren 1900-5, iii.' Neuste Erscheinungen, etc.

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE UND SOZIOLOGIE. Jahrgang xxix., Heft iv. **Hermann Planck.** 'Die Grundlagen des natürlichen Monismus bei Karl Christian Planck' (Schluss). [Deals principally with Planck's ethical doctrine. Morality is conscious unity with the universal law and end of the world—the law of Concentration. The highest possible creation is man—or some similar being—a central point formally governing the external world, in which the real unconditional-materiality with all its forces—has created as spirit the formally unconditional. To round things off it only remains to make mankind a perfect organism, and to do so we must have collectivism. The external, mechanical idea of the state must give place to the *berufsgenossenschaftliche Selbstverwaltung*. But morality has no extra-human aspect, after all, since man remains in opposition to Nature; religious conceptions are banished, and his life is made a mere sportful product of eternally parturient Nature.] **W. Schallmayer.** 'Zur sozialwissenschaftlichen und sozialpolitischen Bedeutung der Naturwissenschaften, besonders der Biologie.' [A protest against exclusive attention to economical questions, and a consideration of the principal arguments against permitting Sociology to be influenced by natural science, especially Biology.] *Besprechungen. Zeitschriften. Bibliographie.*

RIVISTA FILOSOFICA. Anno vii., vol. viii., Fasc. iii., May-June, 1905. **G. Vailati.** 'L'influenza della Matematica sulla teoria della conoscenza nella Filosofia moderna.' [Deals, so far, only with the philosophers of the seventeenth century, omitting Spinoza, and explaining at length to what extent Leibniz in particular applied mathematical methods to philosophical constructions.] **B. Varisco.** 'La fine del Positivismo.' [Positivism may be out of fashion; but the temporary vogue of a philosophy has nothing to do with its truth. The writer takes the opportunity of reaffirming his own positivist convictions, illustrating them by a discussion on the question of determinism, which for his part he re-asserts, simply as a fact of experience.] **G. Buonfiglioli.** 'Tertulliano e la Filosofia Pagana.' [With all his contempt for heathen philosophy, which he regarded as part of a vast Satanic system, Tertullian found himself obliged to borrow its methods for the organisation of Christian doctrine, choosing by preference Stoicism for the purpose.] *Rassegna*

Bibliografica, etc. Fasc. iv., September-October. **E. Juvalta.** 'Per una scienza normativa morale.' [Ethical science cannot after all be reduced to a mere analysis of facts. It demands an ideal. The writer's ideal is absolute justice—the giving equal chances to all citizens of enjoying the goods for whose attainment society exists. Egoism is no more reasonable than altruism, for reason does not prescribe ends but means.] **G. Buonfiglioli.** 'La Psicologia di Tertulliano nei suoi rapporti colla Psicologia Stoica.' [Tertullian not only borrows his general materialism from the Stoics, but also various details of their psychology.] **A. Pagano.** 'Vicende del termine e dell concetto di legge nella Filosofia Naturale.' [The idea of natural law shows three historical phases. In the first physical uniformities are explained as divine volitions of an arbitrary and changeable character. In the second these volitions are conceived as invariable and necessary. In the third natural law is identified with the impersonal order of phenomena; but while one school regards this order as a fixed necessity, another school regards it as merely contingent.] **S. Montanelli.** 'Il Meccanismo delle emozioni.' [Disputes the theory of Sollier, according to which, as here described, emotion is the consciousness the brain has of its own sensibility.] **F. Bonatelli.** 'Multa renascentur (Apologo).' [Imagines a race of animals to whom light is a new experience, greatly puzzled to explain its nature, until a school arises which proclaims, to the satisfaction of all but a few, that there is really no such thing as light!] *Rassegna Bibliografica*, etc

IX.—NOTE.

MIND ASSOCIATION.

THE Annual General Meeting will be held in the University College, London, on Saturday, 2nd June, 4.15 P.M.

The following gentlemen have joined the Association since the printing of the last number:—

ALTON (E. H.), Trinity College, Dublin.
 DAVIDSON (Dr. J.), High School, Stranraer, N.B.
 HARRIS (Rev. W.), Eaton Socon, St. Neots, Hants.
 ROGERS (R. A. P.), Trinity College, Dublin.